GUIDE TO THE MK2 MARITIME ARABS FILE

[The MK2 Maritime Arabs file contains information on the Arab pearl fishers of the Persian Gulf, and the traders and sailors of the Persian Gulf, Red Sea, and southern Arabian peninsula who sail and trade along the east coast of Africa as far south as Zanzibar and to the west coast of India. It does not concern, as a whole, a particular linguistic, political, or ethnic group.

Apparent references to these pearl fisheries occur as early as 2000 B.C. Today, fleets of pearling boats move up and down the Persian Gulf, fleets from different ports each having a recognized territory. During the most prosperous years, at the turn of this century, the fleet was probably close to 3,000 boats employing not more than 40,000 men. By 1946, because of competition from cultured pearls, there were only about 530 boats, but reliable published figures concerning the fleet size do not exist (1: Bowen, pp. 167-169). Pearl diving is seasonal work (four months average) and during the months when the water is too cold (below 85°F), the divers may farm, pick dates, or work as crews on the trading dhows.

The trading dhows are lateen sailed boats, powered for the most part by the regular monsoon trade winds which blow from the northeast from October to March and from the southwest from April to September. These winds have been regular for millenia and blow parallel to the South Arabian and East African coasts. The dhows carry dates, salt, haberdashery, and a variety of contraband and cheap goods that sell in the native markets of the area.

The trade has existed for millenia and shows no signs of failing.

There are four sources in the file; all in Engish. 1: Bowen is exclusively concerned with the Persian Gulf pearl fisheries and provides a detailed account of the industry from the life of the divers to the sale of the pearls to the Bombay merchants. 2: Villiers is by a sailor who spent over a year sailing with the traders. It covers a variety of aspects of the Arab dhow trade, including the ports of call, the economics and the class system of the seamen. 3: Bowen concerns the two major maritime industries, fishing and pearling, and also contains brief information on rock coral mining. The description of the fishing industry is detailed, including much on equipment and methods. Pearling is discussed in terms of marketing, labor and profits, the techniques having been described in 1: Bowen. 4: Bowen is concerned with the daily life of the dhow sailor.

These four sources provide a picture of an economic system that has existed with only minor changes for probably more than 4,000 years. All four were written between 1948 and 1951 and are based on fieldwork from 1938 to 1947, as well as the historical background. Three are by an engineer and one is by a sailor. While they may lack the observations or analyses of a trained social scientist, they have the value of first-hand accounts. This file should be useful for comparison with other small-scale, yet international, economic systems found throughout island coastal and border areas of the world. The file was processed in 1955.]

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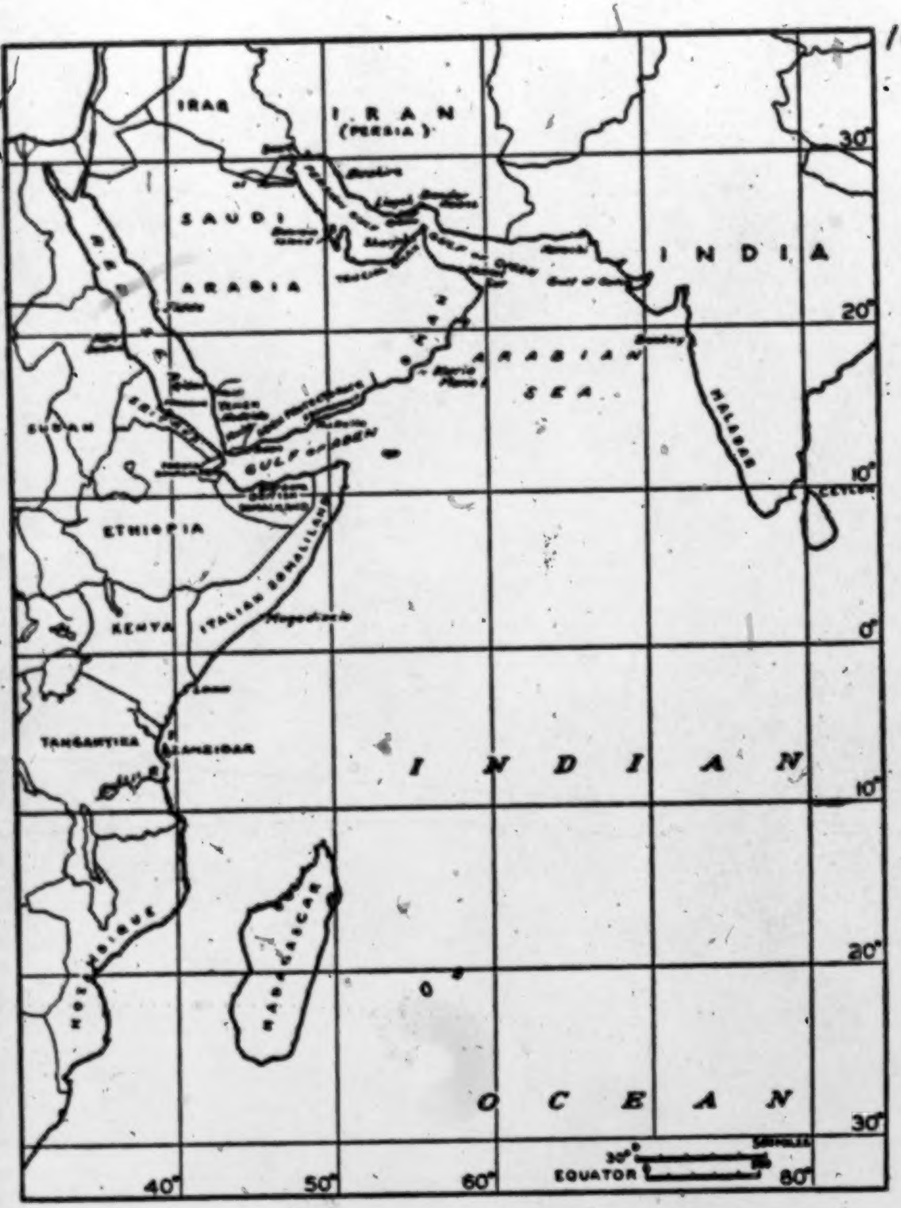
IRAQ
I R A N
(PERSIA)
SAUDI
ARABIA
INDIA
ARABIAN
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GULF OF ADEN
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MALABAR
CEYLON
SUDAN
ERITREA
ETHIOPIA
ITALIAN SOMALILAND
Mogadiscio
KENYA
Lamu
TANGANYIKA
ZANZIBAR
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I N D I A N
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80°
EQUATOR

Fig. 1. Map showing the area discussed in the text. Persian Gulf dhows still coast to Zanzibar on the northeast monsoon and return on the southwest monsoon

Facing p. 162

487 noted that Western shipping could have successfully accomplished the same end by simply coasting, even if the direct southern route to India had never been discovered.

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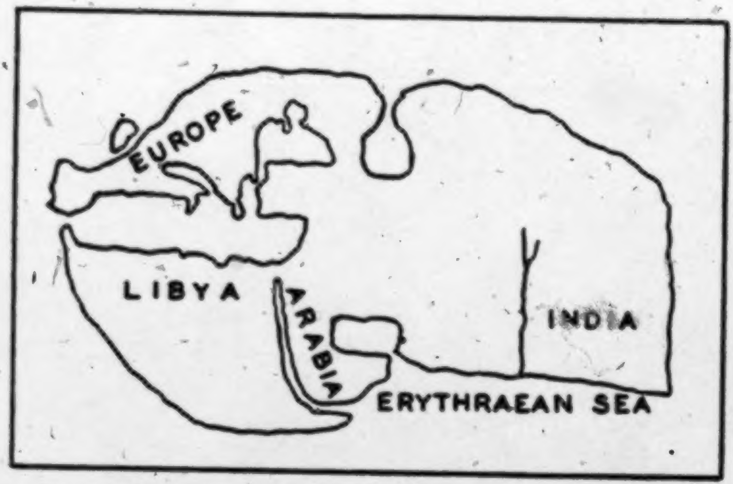

Fig. 2. The East as the ancient Greeks and Romans visualized it in the first century B.C. The map is constructed from distances and directions presented by the ancient geographers

It should also be emphasized that for the people inhabiting the coasts there was never any 'discovery' of the fact that the monsoon trade winds blew in one direction along the South Arabian and East African coasts for six months and then blew in the opposite direction for another six months; the people up and down these coasts knew it as a fact. Thus it was probably known to the Babylonians and Egyptians that the winds along the coasts in the Indian Ocean were subject to seasonal reversals. The Babylonians had organized sea trade as early as the twenty-third century B.C.

However, the fact that a ship could sail between India and Arabia directly, by a route shorter than the coasting route, had to be discovered. Whether it was the Indians or the Arabs who discovered this is not known; while we have a lack of reference to ancient Arabian shipping, there is considerable material referring to Indian shipping before the Christian era. A Buddhist record attributed to the fifth century B.C. relates that the sailors then used 'shore-finding birds' to find land.[2] They released the bird and, if it could not spot land, it returned to the boat;

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[2] T. W. R. Davids, *Journal Royal Asiatic Society* (1899), p. 432.

Mogadiscio in Italian Somaliland (over 1,200 miles from Aden); to various Indian ports, which are between 2,000 miles (Karachi) and 2,500 miles (Bombay) from Aden, Besse's dhows have been known to have made an occasional trip.

The point of all this is that Besse has found it profitable to operate his dhows within a 450-mile radius of Aden, but no farther (see Figure 4).

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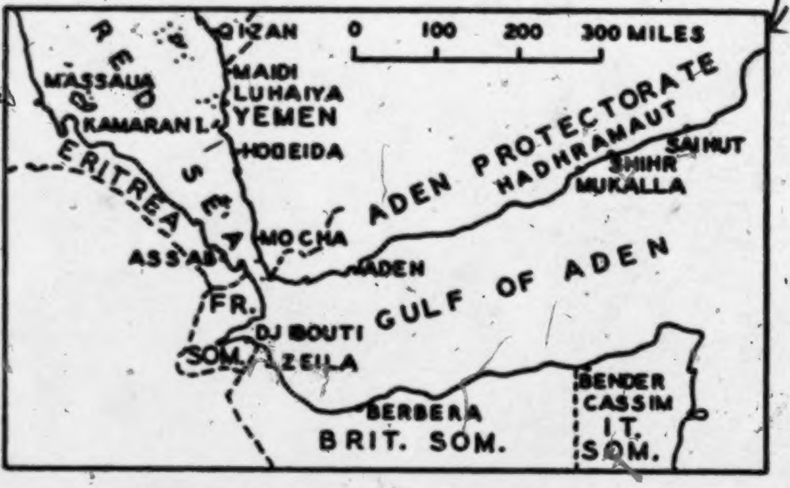
RED SEA
QIZAN
0 100 200 300 MILES
MASSAUA
MAIDI
LUHAIYA
YEMEN
KAMARAN I.
HODEIDA
ERITREA
ADEN PROTECTORATE
HADHRAMAUT
SAIHUT
SHIHR
MUKALLA
ADEN
MOCHA
ASSAB
FR.
GULF OF ADEN
DJIBOUTI
SOM.
ZEILA
BENDER CASSIM
BERBERA
BRIT. SOM.
IT. SOM.

Fig. 4. Map of the southern Red Sea-Gulf of Aden area

The same is true of dhows from other ports in the area, for one finds Aden full of dhows from the same ports to which Besse sends his dhows, but few from ports farther away. Thus it seems that dhows can operate economically to and from Aden within a 450-mile radius. However, more cargo goes out of Aden by dhow than comes in by dhow, and many of the dhows from Yemen and the Somalilands come to Aden empty in the chance of picking up cargoes (see Plate 23—top). It should also be noted that most of Besse's dhows return to Aden empty after delivering their cargo in the 450-mile radius. The above does not apply to the deepwater ships coasting down from Arabia to Africa, as these ships make only one trip a year. The above case for Aden applies only to coasters which make a number of trips a year, always returning to their home port (in Aden or the 450-mile radius).

Vaidya[64] has estimated that in 1944 there were about 5,300 sailing

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[64] K. B. Vaidya, op. cit., p. 17.

however, if it sighted land, it headed straight for it, showing the sailors 487
the direction of the nearest land. Certainly this would seem to indicate voyages of more daring than mere coasting voyages. There are numerous Sanskrit and Pali references to Indian trading voyages dating from about the third century B.C., and there is one Sanskrit manuscript containing a treatise on shipbuilding in ancient India, giving the sizes (ranging up to 260 feet in length) of dozens of types of ships.[3]

Zanzibar is the unofficial southern port for the lateen fleet sailing down 103
from the north, although the Indians sometimes go on to Madagascar. 487
Soon after the northeast monsoon has set in, lateen craft start to come into Zanzibar. Arabs come from the Persian Gulf ports of Basra, Kuwait, Bahrein, and Sharjah on the Trucial Coast of Oman; Persians send ships from the Persian Gulf ports of Bushire, Lingeh, Qishm, and Bandar Abbas. Arabs of the Oman ports of Sur and Muscat on the Gulf of Oman and Indians from the Gulf of Cutch and the Malabar coast all send dhows down to Africa. Arab craft also sail down from Aden and Mukalla in the Hadhramaut, while the Red Sea contributes its craft from Port Sudan, Massawa, and Hodeida. Even the Somali coast contributes to the fleet arriving at Zanzibar, with dhows coming down from Djibouti, Berbera, and Mogadiscio.

Kuwait is the largest maritime and dhow-building port in the Persian 361
Gulf, with Bahrein a very poor second. While Bahrein cannot begin to 501
compare with Kuwait from a maritime standpoint, it probably ranks ahead of the latter as an emporium in the Persian Gulf. It serves for all the entrepôt trade to the eastern coast of Saudi Arabia, the goods coming into Bahrein in large dhows and being transshipped from Bahrein to Arabia in shallow-draft *jalbhuts* (see Plate 17—top). In 1939 Kuwait had 106 ocean-going *bhums* on the registry.[4] However, the majority of the Kuwait deepwater *bhums* sail to India, rather than to Africa, carrying dates from Basra. The mariners of Kuwait probably reached their present maritime status a little over a century ago. Palgrave traveled in the Persian Gulf in 1862-1863 and was much impressed with the maritime activity of Kuwait:

> Among all the seamen who ply the Persian Gulf, the mariners of [Kuwait] hold the first rank in daring, in skill, and in solid trustworthiness of character. Fifty years since their harbour with its little town . . . was a mere nothing; now it is the most active and the most important port of the northerly Gulf.[5]

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[3] R. Mookerji, *Indian Shipping* (Bombay: Longmans, Green and Co., 1912), p. 19.

[4] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 399.

[5] W. G. Palgrave, *A Year's Journey Through Central and Eastern Arabia (1862-63)* (3rd ed., London: Macmillan and Co., 1866), II, 386.

426 clean-cut in Villiers' case, as all the shares of the *nakhoda* and the mate
465 come from the crew's half of the net earnings. On the 240-ton *sambuk El Wafi*, which I boarded in Aden in 1950, the shares were as follows:[59]

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	4	1	4
Serang (mate)	2	1	2
Sukhani (quartermaster or helmsman)	1½	3	4½
Muqaddam (boatswain)	1¼	1	1¼
Katib (clerk)	1½	1	1½
Wakil (steward)	1¼	1	1¼
Bahri or *mallah* (sailors)	1	33	33
Total shares			47½

In India some crews are paid on a salary basis, but many others work on a share basis. However, in India the owner takes one-third of whatever the ship earns. Then the craft's expenses while she was at sea and the supplies for the crew are deducted from the remaining two-thirds; the remainder is then divided among the captain and crew according to shares.[60] By dividing the profits in this manner the Indian owner gets about a quarter less than the Arab, while the Indian crew gets about ten per cent more.

471 The largest importer and exporter in Aden, and probably the whole
426 Gulf of Aden for that matter, is A. Besse and Company, operated by a
465 shrewd Frenchman, Mr. Antone Besse. Among Besse's various holdings in the Middle East are twelve dhows, all registered in Aden. The *El Wafi* was one of the twelve *sambuks* owned by A. Besse, and operated in the Gulf of Aden and the lower Red Sea. On the average these dhows made four trips a month. The *nakhoda* was given advances, which he in turn gave to the crew, before each trip. After four trips the gross return for

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[59] It will be noted that the Arabic names in Villiers' list of the members of the crew on a Kuwait *bhum* and in my list of the members of the crew of an Aden *sambuk* are not the same; however, this does not mean that either is necessarily wrong. The Arabic names on my list were checked from three independent sources in Aden, and my informants in Aden recognized Villiers' *muʿallim* as the word the Kuwaiti used for 'mate.' Villiers indicated on his list 'quartermaster' but did not give the Arabic for the word. The Arabic word that I found in use in Aden for this member of the crew was *sukhani*, which comes from *sukhan*, the Arabic for 'rudder.' Thus it would seem that the more proper translation of the word is 'rudder-man' or 'helmsman,' although his position on the dhow is really that of 'quartermaster.' The word *muqaddam* is the word commonly used on land to refer to a 'headman' who is the leader of any other group of working-men. However, on a dhow the *muqaddam* is the man who superintends the letting go and the weighing of the anchor, so the translation of the word when applied to seafaring men is properly 'boatswain.' The important fact evident from the two lists is that there is always a consistency in the top officers of a dhow—there are a captain, a mate, three quartermasters (or helmsmen), and a boatswain, irrespective of the Arabic name by which they are known.

[60] K. B. Vaidya, op. cit., p. 41.

111 MK2 Maritime Arabs

1: Bowen, Richard LeBaron, Jr. The Pearl Fisheries of the Persian Gulf. The Middle East Journal, Vol. 5, pp. 161-180. Washington, D. C.; The Middle East Institute, 1951.

Yale: Bj59a.M58.v.5.

[The author writes an interesting analysis of the pearl fishing industries of the Persian Gulf. He discusses at length the foreign marketing value of Gulf pearls, the division of profits and economic relationships within the industry, the pearling fleets, and covers the techniques and hazards of pearl diving. Bowen is a professional chemical engineer and worked for the Arabian American Oil Company from 1945 to 1947 in Saudi Arabia. --Analyst.]

Field date: 1945-1947
Analyst: Olivia Maldonado

Evaluation: Chemical Engineer-4
Processed in 1955

111 **MK2 Maritime Arabs**

2: Villiers, Alan. Some Aspects of the Arab Dhow Trade. The Middle East Journal, Vol. 2, pp. 399-416. Washington, D. C.: The Middle East Institute, 1948.

Yale: Bj59a. M58. v2.

/This paper is by a deep-sea sailor and author who spent more than a year studying at firsthand the Arab dhow trade from Kuwait. The author describes the trade circuit, economic practices, and class differentiations of the Kuwait seamen. He also includes four illustrations of the various types of ships used. --Analyst/

Field date: 1938-1939
Analyst: Beverly Meeker

Evaluation: Traveler-5
Processed in 1955

3: Bowen, Richard LeBaron, Jr. Maritime Industries of Eastern Arabia. The Geographical Review, Vol. 41, pp. 384-400. New York: The American Geographical Society, 1951.

Yale: E10-G132-41

[Bowen writes an interesting article on Eastern Arabia's two major marine industries: fishing and pearling. The fishing industry is described as to methods and equipment used and accompanied by illustrative plates while pearling is covered in terms of foreign marketing value of the pearls, labor and division of the profits within the industry, and the techniques of pearl diving. The author is a chemical engineer who worked three years with the Arabian American Oil Company and some months as technical and engineering adviser to the Arabian expedition of the American Foundation for the Study of Man --Analyst.]

Field date: 1945-1947
Analyst: Olivia Maldonado

Evaluation: Chemical Engineer 4
Processed in 1955

4: Bowen, Richard LeBaron Jr. The Dhow Sailor. The American Neptune, Vol. XI, pp. 161-202. Salem, Massachusetts. The American Neptune, Inc. 1951.

Yale: Uy10.Am35.11; 8 plates.

/Mr. Bowen, a chemical engineer who has a special interest in the Arabian Peninsula, has written an informative description of the life of an Arab who sails on a dhow. The dhow sailor and his life on board ship is clearly depicted. Among other things the author describes the living conditions of the sailor, his wages, what he eats, how he views life, what types of cargo the ships carry, where they sail etc. Furthermore, Bowen discusses the place the dhow trade occupies in the world commercial picture and contemplates the future of this ancient trade system. --Analyst/

Field date: 1950
Analyst: Claire Nader

Evaluation: Engineer-5
Processed in 1955

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Maritime Arabs MK2

[For information on boats and boat equipment and on the pearling industry, see MI1 Kuwait, 1: Dickson, Category 116, pp. 473 to 496.]

1: Bowen
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MK2 Maritime Arabs MK2

[For bibliographical references, see complete text.]

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galleon. *Baggalas*, being both costly to build and unwieldy in a seaway, are now unfashionable. A *boom* is both cheaper and much easier to build, and carries just as much. Her sharp stern makes her safer in a seaway, though it is no part of her builder's plan that her *nakhodas* will try her qualities in a storm. Their sailing, he hopes, will be confined to sunny seas and more or less favorable winds; therefore the clumsy lateen rig will do.

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The lateen is awkward but cheap; it demands a big crew, but these are cheap, too, for they are the sailmakers and riggers as well as mariners, and their only cost is an agreed share in the ship's earnings. The lateen is a grand pulling sail, and the dhows sail handsomely in their own conditions. There is nothing clumsy about them, though their fish-oiled hulls smell abominably and their underwater bodies are preserved by a mixture of tallow and lime, rubbed on by hand and renewed quarterly.

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The sailors do this work, as well as handle all the cargoes, keep the passengers in order and extol the merits of their ship so that more passengers might sail with her, tow the ship with her own longboat and propel the smaller dhows by sweeps, in calms, and fight for her if need be. The Kuwait dhows today are never armed, though the Suri may be.

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A brief description of my personal experiences will serve to illustrate a typical East African voyage.[1] I sailed in a Kuwait dhow of the *boom* type, a vessel of 2,000 date-packages capacity — perhaps 150 tons — which had a crew of twenty-eight. She carried something between 120 and 180 passengers, although her hold was full of salt and rice, and her decks were already crowded with a large longboat, a small gig, and a dhow under construction for sale at Lamu.

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I joined the vessel at Ma'alla, the native port of Aden. She had already been several months at sea, peddling a full cargo of dates from Fao (by the mouth of the Basra river) around the coast of the Hadhramaut, and to Berbera. When I joined her, she had been hauled out on the beach at Ma'alla and her bottom

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[1] The voyage here summarized is described in detail in the author's *Sons of Sinbad* (New York, 1940).

3: Bowen C-4 (1945-1947) 1951 MK2 Maritime Arabs MK2

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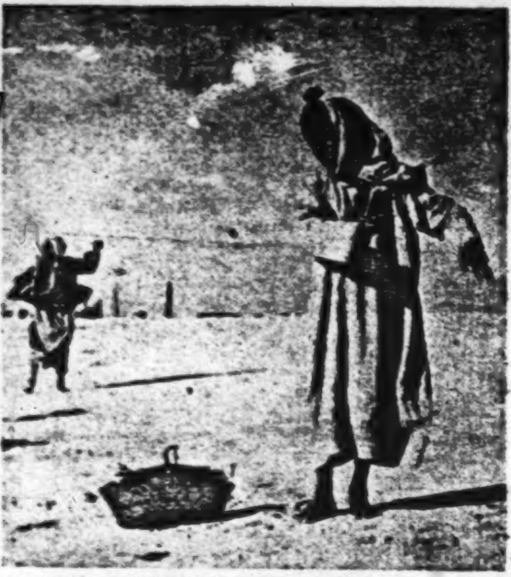

Fig. 2—Arab boys fishing with hand lines. When the fish are running, small boys often line the shore by the dozen.

the Koran, but a particularly juicy delicacy from a fish's point of view. The Arabs dot the shallow water with these basket traps at points where feeding appears good; the edges of small coral reefs are favorite spots.

The Arab fisherman never marks his traps with floats as the American lobster fisherman does, because he fears they will be plundered; he must remember the location of each trap. Where he cannot see the bottom, he suspends a float several feet below low-tide level. To tend his traps, this Arab rows his small boat up and down at low tide until he spies his trap or float and hooks it with a pole; in shallow water he sometimes dives for the trap. I once watched a crew of three fishermen off Ras Tanura; they seemed to know the approximate location of each trap in the 30 feet of water, but they spent as much as a quarter of an hour peering into the water to find each submerged float. These men used the largest wire traps I saw in the Persian Gulf, and their catch at times was astounding.

The Arabs on the east coast of Arabia seldom use seines, though on Bahrein Island I saw several drying in the sun. However, large communal seines have apparently been used on the Batinah Coast of Oman; for Thomas[1] relates that "there, a hundred fishermen were hauling ashore a communally owned net, the vast extent of which was marked by distant bobbing floats . . . In contrast, a lone fisherman, far out, monotonously cast his circular hand-net." On the Hadhramaut coast of South Arabia the fishermen also use large seines. At Mukalla I saw a two-and-a-half-inch-mesh net 190 feet long and 20 feet wide; a narrower net had a mesh of five inches. These wide-mesh nets are used for sharks. Farther east on this coast, at Jazir Bay, the fishermen set their seines by swimming out to sea on inflated sheepskins!

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[1] Bertram Thomas: Alarms and Excursions in Arabia, London, 1931, p. 156.

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut
Bay side of the Ras Tanura peninsula. All during the fishing season constant
maintenance is necessary (Fig. 13).

226 Because of its shoal water, Tarut Bay is the only place along the Persian
Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
suits against the Arabian American Oil Company, asserting that the change
691 in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
424 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contami-
nated their weirs. These complaints were such an annoyance to the oil-
company executives that they instructed their agents to buy the fishweir
[435] rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few
Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras
Tanura area the sale was an economic blow, for much of the fish supplied to
Hasa Province came from the Ras Tanura traps.

ROCK MINING

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[8] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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● 113 [8] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen,
501 Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shuwes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

wages, they are given cash advances and food during the winter and during 426
slack periods. They never seem able to pay off their debts to the dhow 465
owners.

PEARLING

The most colorful marine industry of the Persian Gulf is pearling.[3] 228
Pearling is definitely a seasonal occupation, confined to the months when 132

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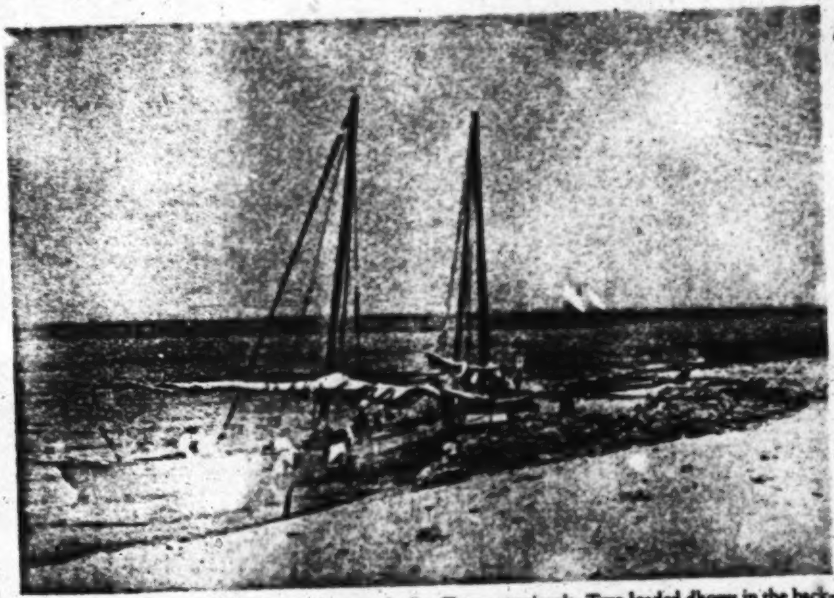

FIG. 15—Unloading hasa from jalbuts on the Ras Tanura peninsula. Two loaded dhows in the background are bringing in more.

the water is warm. On the Persian Gulf coast of Arabia the minimum winter air temperature is in the middle forties, the shallow-sea temperature in the low sixties. From long experience the Arabs have found that they can begin deepwater diving in June and continue until the first week in October. At the start and finish of the season the surface-water temperature is about 85°, but the deep-water temperature is considerably less; the maximum surface-water temperature may exceed 100° in August. Before this main season the *ghaus al-kabir* (great diving), there is a season of about two months, known as the *ghaus al-barid* (cold diving), when smaller boats work the shallower waters near their home ports; during the winter many men go out as "waders" at low tide to pick up what they can just below tide level. 113

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[3] See also R. LeB. Bowen, Jr.: The Pearl Fisheries of the Persian Gulf, *Middle East Journ.*, Vol. 5, 1951, pp. 161–180.

228 Each diver has two lines, one attached to a stone or iron diving weight; so that they will not become fouled, they are passed over sweeps left projecting over the gunwales athwartship and lashed down to the tholepins. The diver puts his feet into a loop over the diving weight (or simply lets the rope pass between his toes), releases the rope by untying a slipknot, and, holding the rope tightly, plummets to the bottom. As soon as he releases the line with the weight attached, the attendant hauls it to the surface. In the meantime the diver frantically plucks all the oysters he can before exhausting his air. He usually crawls on one hand and one foot, propelling himself with his free foot and collecting the oysters with his free hand. He puts the oysters into an open-weave palm-leaf basket fastened to his waist or around his neck, or hitched to a rope (which he holds or which is tied to his body). When he is ready to come to the surface, he jerks this rope.

The maximum depth at which the divers work is about 12 fathoms (72 feet). The average length of time they remain under water has been greatly exaggerated: some stories say 5 to 10 minutes. Villiers,[4] who spent two months on a buyer's *jalbut* with the Kuweit fleet, states that the divers stayed under water from 40 to 90 seconds, averaging about a minute. O'Shea[5] spent some time with the divers of the Trucial Coast, and he also states that the time averaged about a minute, ranging from 40 to 75 seconds. Hugh Smith[6] observes that the Arabs are the best divers employed in the Ceylon fisheries, staying down from 60 to 90 seconds; he cites an authentic case of an Arab who stayed down 109 seconds in 7 fathoms of water.

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461 Ordinarily the diver remains under water for about a minute and rests for two or three minutes; on a good day he may make 30 or 40 dives, totaling half to three-quarters of an hour, and by the end of the season he may have completed more than 3000 dives in 30 to 50 feet of water.

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136 The diver's worst enemy is fatigue. He has little fear of sharks and, indeed, is seldom bothered by them, though O'Shea[7] speaks of an attack on 30 divers, two of whom were killed under water. Whitelock[8] states that the greatest fear of divers on the Trucial Coast is the sawfish, which has been known to cut divers in two. The creature most feared by the divers in the Persian Gulf, at least on the north banks between Kuweit and Bahrein, is a jellyfish known to the Arabs as the *dawl*, which has two- to three-foot stinging tentacles that can easily put out an eye.

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113 [4] Alan Villiers: Sons of Sinbad, New York, 1940, p. 392.

[5] Raymond O'Shea: The Sand Kings of Oman, London, 1947, p. 137.

[6] H. M. Smith: The Pearl Fisheries of Ceylon, *Natl. Geogr. Mag.*, Vol. 23, 1912, pp. 173–194; reference on p. 182.

[7] *Op. cit.*, p. 138.

[8] H. H. Whitelock: An Account of the Arabs of the Pirate Coast, *Trans. Bombay Geogr. Soc.*, Vol. 1, 1844, pp. 32–49; reference on p. 43.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[8] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 Pearl divers suffer from a variety of diseases, most of which can be
752 directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 Divers never eat while they are working. When the day's diving is
461 finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an
312 abundance of fresh water into the water tanks of the dhows much faster
502 than it can be transferred by waterskins. The larger vessels anchor for the
438 night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 Pearls are sometimes bought on the pearl banks by brokers who travel
442 around in their own boats trying to get the best pearls before other brokers
439 hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they all End up in Bombay.

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113 [8] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

4: Bowen C-5 (1950) 1951 MK2 Maritime Arabs MK2

The Dhow Sailor[1]

BY RICHARD LeBARON BOWEN, JR.

I

487 SINCE time immemorial, cargo has been transported in sailing ships up and down the South Arabian and the East African coasts. As the medieval Sinbads and the ancients before them had done for countless centuries, so are the Arabs, Indians, and Persians today transporting cargo in sailing ships up and down these same shores. Today these sailors operate the last great fleet of deepwater sailing ships in the world, and because of the special circumstances, this fleet will probably sail on for many more centuries oblivious to the changing pace of life around it. Life for these modern sailors has changed little in the thousand years that have passed since the adventures of Sinbad the Sailor were recorded in *The Thousand and One Nights*.

502/133 The Arabs, Indians, and Persians are still able to sail their fleets of

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114 [1] Credit for this article belongs in large part to Mr. Frederick Hunt, who, after reading the author's 'Arab Dhows of Eastern Arabia' in THE AMERICAN NEPTUNE, wrote to the Editor and asked if a follow-up might be possible, 'telling something of actual life aboard a dhow, how the crew lives, watches they stand, living conditions, what they eat, their wages, etc.' Mr. Hunt's outline has been followed almost to the letter, with some additional material added to round out the study.

Shortly after the first draft of the article was finished, the writer was very fortunate to become a member of the American Foundation for the Study of Man Arabian Expedition, which conducted archaeological investigations in South Arabia during the winter of 1950. Almost a month spent at Aden and on the south coast of Arabia, enabled the writer to collect much valuable additional first-hand data on the life of the dhow sailor. The writer is indebted to Mr. Wendell Phillips, leader of the expedition, for his assistance in making this particular phase of the study possible. The writer is deeply grateful to Prof. W. F. Albright, vice-president of the American Foundation for the Study of Man, for his guidance and assistance in numerous details in the work. The writer is also indebted to Dr. Philip K. Hitti for valuable advice on certain points.

In doing any work on the subject of dhows, one must consult what Alan Villiers has written on the subject. By sailing with the Arabs on their dhows for almost a full year Mr. Villiers has obtained an intimate picture of the dhow that the casual observer will completely miss, or the serious worker may not be able to get, as the Arabs are rather suspicious of Europeans who investigate their activities too closely. The writer of this present article has drawn on Villiers' material to round out certain aspects of this article and to supply various facts and figures for which Villiers alone is the source. Most of such material has been taken from his entertaining book, *Sons of Sinbad* (New York: Charles Scribner's Sons, 1940), which in further reference will be abbreviated to A. Villiers, *SS*. 113

A description of the various types of dhows mentioned by their Arabic names in this article will be found in R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 87-132, and R. LeB. Bowen, Jr., *Arab Dhows of Eastern Arabia* (Rehoboth: Privately printed, 1949).

however, if it sighted land, it headed straight for it, showing the sailors 487 the direction of the nearest land. Certainly this would seem to indicate voyages of more daring than mere coasting voyages. There are numerous Sanskrit and Pali references to Indian trading voyages dating from about the third century B.C., and there is one Sanskrit manuscript containing a treatise on shipbuilding in ancient India, giving the sizes (ranging up to 260 feet in length) of dozens of types of ships.[3]

Zanzibar is the unofficial southern port for the lateen fleet sailing down 103 from the north, although the Indians sometimes go on to Madagascar. 487 Soon after the northeast monsoon has set in, lateen craft start to come into Zanzibar. Arabs come from the Persian Gulf ports of Basra, Kuwait, Bahrein, and Sharjah on the Trucial Coast of Oman; Persians send ships from the Persian Gulf ports of Bushire, Lingeh, Qishm, and Bandar Abbas. Arabs of the Oman ports of Sur and Muscat on the Gulf of Oman and Indians from the Gulf of Cutch and the Malabar coast all send dhows down to Africa. Arab craft also sail down from Aden and Mukalla in the Hadhramaut, while the Red Sea contributes its craft from Port Sudan, Massawa, and Hodeida. Even the Somali coast contributes to the fleet arriving at Zanzibar, with dhows coming down from Djibouti, Berbera, and Mogadiscio.

Kuwait is the largest maritime and dhow-building port in the Persian 361 Gulf, with Bahrein a very poor second. While Bahrein cannot begin to 501 compare with Kuwait from a maritime standpoint, it probably ranks ahead of the latter as an emporium in the Persian Gulf. It serves for all the entrepôt trade to the eastern coast of Saudi Arabia, the goods coming into Bahrein in large dhows and being transshipped from Bahrein to Arabia in shallow-draft *jalbhuts* (see Plate 17—top). In 1939 Kuwait had 106 ocean-going *bhums* on the registry.[4] However, the majority of the Kuwait deepwater *bhums* sail to India, rather than to Africa, carrying dates from Basra. The mariners of Kuwait probably reached their present maritime status a little over a century ago. Palgrave traveled in the Persian Gulf in 1862-1863 and was much impressed with the maritime activity of Kuwait:

> Among all the seamen who ply the Persian Gulf, the mariners of [Kuwait] hold the first rank in daring, in skill, and in solid trustworthiness of character. Fifty years since their harbour with its little town . . . was a mere nothing; now it is the most active and the most important port of the northerly Gulf.[5]

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[3] R. Mookerji, *Indian Shipping* (Bombay: Longmans, Green and Co., 1912), p. 19.

[4] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 399.

[5] W. G. Palgrave, *A Year's Journey Through Central and Eastern Arabia (1862-63)* (3rd ed., London: Macmillan and Co., 1866), II, 386.

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However, a century before this, Kuwait was apparently noted more for its pearl fisheries (which are still important) than for its maritime trade, as Niebuhr related that in 1763

> Kuwait is a sea-port town. . . . The inhabitants live by the fishery of pearls and of fishes. They are said to employ in this species of naval industry more than 800 boats. In the favorable season of the year, this town is left almost desolate, everybody going out either to the fishing, or upon some trading adventure.[6]

In Niebuhr's time, in the eighteenth century, the Omani sailors from Muscat and Sur on the Gulf of Oman were the famed Arab mariners, for Niebuhr related that

> The inhabitants of Oman, although not fond of sea-fights, are nevertheless the best mariners in all Arabia. They have several good harbours, and employ many small vessels in the navigation between Jidda and Basra. To this last town there come annually fifty such vessels.[7]

In the middle of the last century Muscat was still an important maritime port, for in 1854 Osgood related that

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> Several ports in the Persian Gulf are tributary to it, and some excellent ships and a large number of [*baghlas*] employed in coasting and foreign trade, are owned by the Banian merchants at Muscat. In fact more than half of the trade of the Persian Gulf is carried on in ships owned at Muscat. . . . The trade with America, which is carried on chiefly by vessels from Salem does not exceed thirty-five or forty thousand dollars annually. Dates and cash are usually taken in exchange for American merchandize.[8]

In the present day Muscat has completely fallen from its former prized position and given way to Kuwait and Bahrein Island in the Persian Gulf. However, the port of Sur in Oman still carries on the maritime tradition of the Omanis and maintains a considerable fleet of dhows which have long been prominent in the trading along the African coast.

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The craft that make the trip down the African coast from Arabia are by no means all large ocean-going vessels; craft of all sizes and descriptions come into Zanzibar. Villiers[9] tells of seeing a 30-foot *jalbhut* from Oman sailing down the African coast. Having owned and sailed a *jalbhut* of about the same size in the relatively calm Persian Gulf waters, I have nothing but the utmost respect for anyone with the nerve to sail such a small open boat several thousand miles in the potentially rougher Indian Ocean.

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[6] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 127.

[7] Ibid., 122.

[8] Osgood, *Notes of Travel* (Salem, 1854), p. 81.

[9] A. Villiers, *SS*, p. 190.

439 or other dried fish, *ghee* (clarified butter), honey, tobacco, grinding stones, 487 and straw work (fans, mats, and baskets). It must be remembered that most of the cargo moving around the Middle Eastern waters in small vessels, whether dhows or small coastal steamers, is for the native trade and is destined for native bazaars, which are noted for the cheapness and poor quality of their wares. Once the dhow is loaded it is ready for the trip down the East African coast; however, the Arabs sometimes take a month or more to collect a full cargo.

Upon the *nakhoda* of the dhow rests the responsibility of getting another cargo for continuing down the African coast once the consigned date cargo is discharged. Invariably the *nakhoda* is the nominal owner of his dhow, so he acts as his own agent. As the cargo loaded after the dates are discharged is not on consignment, its selection is a matter of the *nakhoda's* judgment, with an eye to what will sell best in the African markets. However, a cargo that must be regarded as essentially on consignment is that of passengers. On some Africa-bound dhows passengers comprise a considerable portion of the cargo. The competition for passengers is very brisk, so that there is sometimes a race among the various *nakhodas,* who hasten to neighboring ports via motor launch as soon as their ships reach South Arabia to discharge their dates.

167 505 Through the dhows there is a constant flow of Arabs from South Arabia and Oman and of Indians from India. The immigrants usually become porters, hawkers, musicians, or beggars; but if they are very industrious, they may end up owning a small shop in the *suq*. Their usual aim in migrating is to work long enough so that they can go home after they save a little money; usually they never make enough to get out. Villiers[16] states that the Italian officials in Mogadiscio checked four thousand passengers on thirty-five dhows that were in the harbor when he was there in 1939. In 1937 the fare along the Hadhramaut coast between ports was three rupees.[17] In 1939 the fare from South Arabia to any African port was only eight rupees for men and twelve for women.[18] In Aden in 1950 the fare for natives traveling as deck passengers on A. Besse and Company dhows with no accommodations was 15 rupees to Berbera, Djibouti, and other ports about 150 miles from Aden; thirty rupees to Massaua, Mukalla, and ports about 450 miles away; and one hundred rupees to Jidda, Port Sudan, or ports approximately one thousand miles from Aden. These were fixed rates on the dhows operated by Besse; other dhows that

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[16] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal,* II (1948), 404.

[17] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 313.

[18] A. Villiers, *SS*, p. 78.

were trading down the coast could easily afford to undercut these rates. 167

As was mentioned above, women are usually charged higher rates for travel on dhows; this is because they have to be segregated and usually manage to make trouble, unintentional as it may be. Villiers[19] gives a graphic description of the nuisance a group of women can cause on an Arab dhow. For centuries women have apparently been creating disturbances on Arab dhows, for Niebuhr, who traveled down the Red Sea on a dhow in 1763, relates that

> In our passage, we found ourselves in danger of a worse misfortune than shipwreck. The females, who were lodged under us, more than once suffered linen, which they were drying, to catch fire, in consequence of which the vessel must have been burnt, if we had not been alarmed by their screams. . . . Those women were indeed extremely troublesome and indiscreet.[20]

Besides the ship's cargo, every member of the crew usually lays in a 439 store of goods that he personally peddles. Each sailor is allowed a sea chest 505 (see Plate 22—bottom), which he fills with print goods, turbans, flashlights, razors, sarongs, cigarettes, and perfumes which are later diluted. The *nakhoda* usually has some rugs or carved wooden chests to peddle (see Plate 17—bottom). Virtually none of this material enters Africa legally, but is for the most part smuggled in. Most of these trivial goods are carried in by the Arabs personally. Villiers[21] relates that he saw one man wear three gowns and eight sarongs, then wrap more sarongs around his knees, and make six trips through customs a day. Sometimes they are detected and stripped, but that is part of the risk. Often the Africans come out in canoes at night and remove the goods in small quantities. Frequently Arabs travel down the African coast on dhows as professional smugglers, living only for the smuggling they can accomplish. This sort of trading has been going on for centuries, for Paris[22] related that '. . . leur navires sont de vraies caravanes dans laquelles tous les matelots ont un intérêt.'

For the Arabs and the Persians, the trip down the African coast is leisurely and slow. It is not unusual for a dhow to stay in a port for three or four weeks haggling over a cargo, only to leave without having transacted any business. There is no rush, simply because there would be a long wait for the southwest monsoon to set in and carry them back north, if

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[19] Ibid., p. 78 ff.

[20] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 219.

[21] A. Villiers, *SS*, p. 143.

[22] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra-Européens* (Paris, Bertrand, [1841]), p. 9. '. . . their ships are true caravans in which every sailor has an interest.'

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567 ported annually from East Africa to the Persian Gulf and Arabia.[24] The term 'human cargo' is no exaggeration, for slaves were packed in the holds of dhows with an eye only towards maximum capacity. There is an old sketch of a small dhow loaded with 156 slaves (men, women, and children) packed into the hold, on the bottom and on two bamboo decks above with only three feet clearance between decks (see Figure 3).[25]

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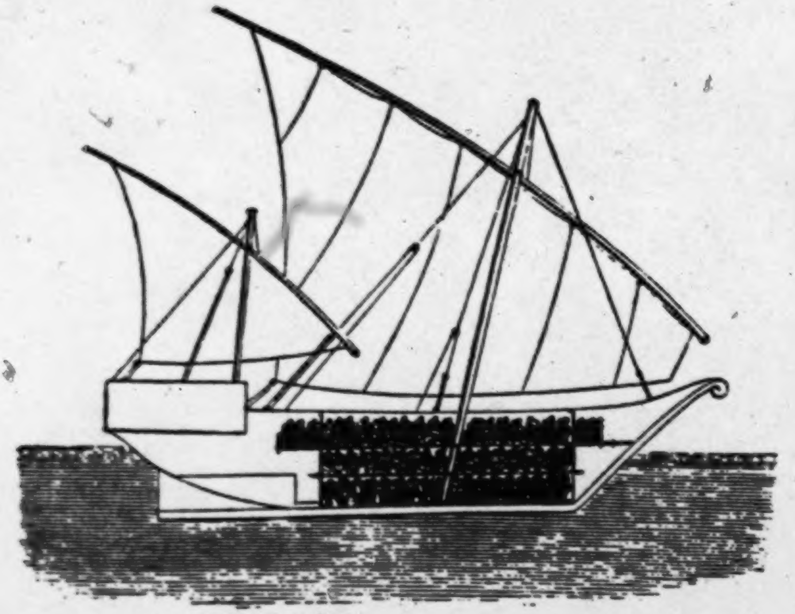

Fig. 3. Slaves packed into the hold of a small dhow, on the bottom and on two bamboo decks, with only three feet of clearance

567 Today slave-running carries such high penalties that no Arab would attempt it with a hold full of slaves on a long voyage to the Persian Gulf. However, the slave trade still operates on a reduced scale in the Red Sea between Africa and Arabia, usually utilizing fast *zarooks* and carrying only a small number of slaves. The trade is still active, mainly because both slavery and white slavery still flourish in Saudi Arabia and Yemen. These two countries signed neither of the two world conventions: the one in 1921 forbidding traffic in women and children and the one in 1933

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113 [24] Anonymous, 'Vessels Used in the Zanzibar Slave Trade,' *The Illustrated London News*, LXII (March, 1873), 208-209.

[25] Ibid.

forbidding traffic in adult women;[26] in 1948 these same two countries failed to file reports on efforts to suppress traffic in women, children, and obscene publications.[27] 567

Slaving is difficult to stamp out, as the African victims are led to believe that their social status will be bettered. Actually, there is some truth in this, for an African, even as a slave, has a far better life in Arabia, since the Arabs treat their slaves fairly.

British regulations at Zanzibar provide that dhows must carry crew members voluntarily signed on and not in excess of that needed to sail the ship.[28] At Mombasa, *British Regulations for Native Vessels* provides that no man may be signed on as a seaman without satisfying the officials that he has voluntarily shipped, and further that no passengers are to be shipped without the knowledge of the authorities.[29] However, Villiers[30] relates that an Omani *sambuk* intentionally ran down a fishing canoe off Africa and 'saved' two Africans to be sold later as slaves in Arabia.

439 In essentially the same category as the slave is any other illegal or illicit trade. During World War I gun-running was at a high, but now the trade is not very prosperous. There is considerable cargo smuggled to avoid duties; tea and other goods are run to Persia by the Arabs on the Trucial Coast of Oman—the old Pirate Coast.

486 The customs and immigration officials in Africa do not have much use for the Arab deepwaterman, with his Arab passengers and smuggling crew. On the other hand, the Arab takes delight in deception, and attempts to confuse the European as much as possible. [505] No large dhow ever carries a visible name; its papers usually contain an official name, but more often the dhow is known by the name of the *nakhoda*, who is usually the nominal owner.

As soon as an Arab dhow reaches an African port, the local officials try to get a passenger and crew list; in this they never succeed, as certain of the passengers always vanish into the native anchorage as soon as the anchor is down, to return after the survey is made. This is easy, as all the native craft are herded into a separated anchorage and often new arrivals have to drive into small spaces in the middle of the anchorage.

Few carry passports or other identification, so actual identification is

is often out of sight of land, at least on the Arabian side, as the Arabian side is treacherous and the coast low and sterile.

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[26] J. L. Carver, 'Slavery's Last Stronghold,' *United Nations World*, II, No. 5 (June, 1948), 24-27. 113

[27] However, in all fairness it should be pointed out that the USSR, Afghanistan, Byelorussia, Honduras, Iceland, and Norway also failed to make reports on the grounds that the problem has not arisen in their countries.

[28] A. Villiers, *SS*, p. 212.

[29] Ibid., p. 190.

[30] Ibid.

A dhow sailing from the Persian Gulf to Africa or to India does not actually go at all out of the way by coasting, as a glance at a map will show. This practice of coasting has the added advantage of keeping the dhow within easy rowing distance of land in case the ship should go down, a possibility never overlooked.

In contrast to the Arabs and the Persians, the Indians still navigate their dhows over open ocean from India. However, a glance at the map will show the reason—craft from India would have to go far out of their way to coast to Africa in sight of land. Thus by necessity the Indians have maintained the knowledge of navigation that the Arabs and Persians had mastered so successfully in medieval times; being able to get along successfully by coasting their deepwater craft, the Arabs and Persians have lost the navigational knowledge which in medieval times brought them in contact with junks from China in the waters farther east. When the Arab has to sail a navigated course, he usually, though somewhat reluctantly, gets an Indian navigator. It is interesting to note that the ancient mariners in Greek and Roman times successfully navigated the southern route to India using only the sun and the stars; the mariners' compass was not invented until the Middle Ages.

There is one other alleged aid to navigation in the Indian Ocean that was known to the ancients. Niebuhr traveled from Arabia to India via dhow in 1763 and related that

> The passage between Arabia and India was formerly thought very dangerous. Ships were carried on by so rapid a current, that they could neither keep their reckoning, nor distinguish the coast during the rainy season: several were consequently lost on the low coasts of Malabar. These misfortunes have ceased to take place, since an observation was made, which has been thought new, although Arrian speaks of it being known to the ancients; in the Indian Ocean, at a certain distance from the land, a great many water serpents, from 12 to 13 inches in length, are to be seen rising above the surface of the water. When these serpents are seen, they are an indication that the coast is exactly two degrees distant. . . . We saw some of these serpents, for the first time, on the evening of the 9th of September; on the 11th we landed in the harbour of Bombay.[33]

On the run down to Africa the Arabs sail by night as well as by day; at night they make sure they are well out at sea and set a safe course by the compass. With its many reefs the Red Sea is an exception, for even local craft with a knowledge of the way anchor by night and sail by day

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[33] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 373.

502 whenever they are near reefs. An exception to this is the slave-runner
487 dashing from Africa to Arabia, for his activities are best carried on under cover of darkness. The reefs in the Red Sea are the main reason why foreign dhows do not venture very far into its waters.

In the field of navigation the Arabs are little impressed with Vasco da Gama's voyage, so famous in the West.[34] The Arabs take all the credit themselves; they claim that da Gama forced an Arab pilot to show him the way to India. Arab legend relates that an Ibn Majid, a famous pilot from the Persian Gulf, was delivered to da Gama by the Sheikh of Malindi (in present-day Kenya) as a hostage for stopping the siege of the town; the Arabs immortalize this Persian Gulf pilot and associate da Gama only with European intrusion into their territories.

501 The Arab dhow is actually not a very seaworthy craft (see Plate 19—top). It manages very successfully in fair weather, but in any kind of rough weather the dhow is likely to get into trouble fast. The *baghla* is apparently considerably less seaworthy than the *bhum,* as even Arab passengers (who are not particularly well informed about anything) prefer to travel in *bhums.*[35] Apparently the great transom stern of the *baghla* tends to make the craft unmanageable in heavy seas.

In the African port of Mombasa a Casualty Book listing all dhow casualties in the vicinity of the port shows that, while there were frequent accidents with small craft and less with larger craft, there was little loss of life.[36] This stems from the Arab's method of coasting close enough to land so that he can row ashore. However, no records list the number of dhows that have gone down with complete loss of life.

If the dhow springs a leak, it may often be disastrous. On a heavily-laden dhow the crew cannot get at the leak to repair it, and not having any pumps they do not even have time to start bailing. If they can get at it, the Arabs have been known to stop a leak where a plank was stove in by filling a cloth with rice, tying a string around the gathered neck and stuffing it in the hole; when the rice expands it fills the hole tightly.

000 Villiers[37] relates that a 178-ton Indian dhow loaded with mats sprang a leak and sank off Africa because the cargo prevented anyone from getting at the leak. The crew took fifteen minutes to clear the dhow, and very soon afterwards the sea was over her decks. The early English traveler Palgrave[38] had the same thing happen to him in 1863—an event which

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113 [34] A. Villiers, *SS*, p. 197.

[35] Ibid., p. 106.

[36] Ibid., pp. 191-194.

[37] Ibid., p. 193.

[38] W. G. Palgrave, *Central and Eastern Arabia* (3rd ed., London: Macmillan and Co., 1866), II, 342 ff.

501 sometimes it is too late, for it may have already gone overboard. The Arab usually has no lines ready when he comes into a mooring and he may just as often throw a loose anchor over as not.

501 502 Dhows never show lights of any kind at night, whether under way or anchored. Although British regulations have forced many dhows from various ports on the Indian Ocean to carry lights, there is unfortunately no way of forcing the Arabs to use them. This undoubtedly results from centuries of travel in pirate-infested waters, where a light at night served only as a signal for sudden attack from pirates. There is only a weak light in the binnacle with which to see the course; everything else is dark. Not even when in the sea lanes off South Arabia, in the Persian Gulf, or in the Red Sea, where freighters and tankers beat a constant path, does the dhow show a light. In case of collision at night, the boat that can prove that it showed lights has a legal edge.

At the West Pier at Ras Tanura on the Persian Gulf, there is often considerable movement of Arab dhows and Arab *lanchs* (kerosene-driven native launches). Dhows slip in and out of their mooring like shadows on nights so black that a dirty white sail could not be seen ten feet away. One night a *lanch*, all of which carry lights, hit a rock-laden dhow amidship and in a matter of seconds sent her to the bottom in forty feet of water. Native divers unloaded her, and she was eventually salvaged. Since then, dhows make a frantic attempt to fan their coffee fires up to a bright glow when they see any *lanch* lights approaching, but they still do not carry standard lights. It is an eerie sight to see the glow of a charcoal fire suddenly light up a large lateen sail directly in your path!

501 502 721 When sailing along their own coasts, the Arabs like to sail in two's and three's. This arises from the fact that piracy is by no means a thing of the past. For centuries piracy and robbery were honorable professions among many tribes along the long Arabian littoral; such a reputation did the piratical Omani have during the last half of the last century that the very sight of their characteristic *bedans* and *batils* brought actual fear to the population of Zanzibar.[40] Niebuhr noted dangerous conditions in the Red Sea two centuries ago:

> Although from pirates properly so called, there is little to be feared in the Arabic gulfh [Red Sea], yet, so unskilled are the mariners in these latitudes, that they dare not venture to any distance from the coasts. This timorous mode of sailing might expose a single vessel to the robbery of the Arabs; to avoid which, these ships sail in little fleets; four always setting out together, that they may join to defend themselves.[41]

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[40] G. L. Sullivan, *Dhow Chasing* (London, 1873), p. 102.

[41] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 212.

It was in the Red Sea that an American ship was plundered in the early 721 nineteenth century; however, the pirates came from the South Arabian coast. This has been described by Osgood:

> Conspicuous among the former rulers of Dhafar was Seyed Mohammad Akil, who . . . was led by ambition and avarice to turn pirate. Among other prizes, in June 1806, he captured, plundered, and burned near the harbor of Hodeida, in the Red Sea, the American ship *Essex*, belonging to Salem, and commanded by Joseph Orne. Captain Orne had arrived in the *Essex* at Mocha with sixty thousand dollars to purchase coffee. He was persuaded to sail from Mocha for Hodeida by Mohammad Akil, who, keeping him company in an armed ship, seized the vessel soon after leaving Mocha, and slaughtered all on board except a Dutch boy named John Herman Poll, whom he carried to Dhafar. The young man was kept in servitude, educated as a Mahometan, married and had several children, and when last visited, within a few years, seemed perfectly contented with his lot, having nearly forgotten his mother tongue.[42]

While the Red Sea is now perfectly safe from such attacks, many areas of the long Arabian littoral in the Arabian Sea and the Persian Gulf are definitely not. O'Shea[43] relates that in the Persian Gulf as late as 1944 a large Arab dhow bound for the Trucial Coast of Oman with foodstuffs was attacked by a Persian dhow and the whole Arab crew murdered. Representations were made to the Iran government by the Political Agent of Trucial Oman; the pirates were supposedly apprehended and hanged by the Iran government.

Around the Kuria Muria Islands off the South Arabian coast, the coastal 721
tribes are very piratical. Villiers[44] relates that in recent times the tribes on 619
the Arabian coast near these islands have been known to seize ships at night, plunder the cargo, burn the ship and sell the crew in the interior. They have also been known to cut moorings at night, thereby allowing the ship to drift onto the rocks; then they salvage the cargo. This is apparently nothing new, for when Bent sailed along these coasts in the late 1890's, he noted the extreme suspicion of dhow sailors for the inhabitants of the coast:

> While at anchor we heard shouts and cries to come to land, but our sailors would do nothing of the sort. They said a single man might often be seen calling that he was wrecked, and asking to be fetched away, but a party of armed men would be behind a rock, and come out and murder the benevolent crew and steal the boat.[45]

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[42] Osgood, *Notes of Travel* (Salem, 1854), pp. 119-120.

[43] R. O'Shea, *The Sand Kings of Oman* (London: Methuen and Company, 1947), p. 116. 113

[44] A. Villiers, *SS*, pp. 292-293.

[45] T. Bent, *Southern Arabia* (London: Smith Elder and Co., 1900), p. 279.

the cargo the dhow had hauled was figured and the cost of the food consumed by the officers and crew was deducted, giving the net earning of the dhow. One-half belonged to the crew and was divided into forty-seven and one-half shares as shown above. The other half belonged to the owner, and represented his return on his investment; the owner had to maintain the dhows from his half of the earnings. As we saw above in the case of the figures presented by Villiers, the owner has little to deduct from his share of the ship's earnings, so his return on his investment is considerable. It is little wonder that Mr. A. Besse was recently able to give Oxford University a contribution of £2,000,000! 421 465 471

Over one hundred years ago, the French Admiral F. E. Paris spent considerable time in the waters around Muscat and wondered how Arab ships could at that time compete with the more efficient European sailing ships. Paris summed up his conclusions as follows: 477

> . . . les Arabs qui les montent habitués au retour périodique des moussons, n'exécutent, en general, qu'un voyage par an . . . [ils] entendent bien le commerce; malgré cela, ils sont rarement employés par les Europeans . . . et, comme ils ne prennent que de très-faibles cargaisons, ce n'est que grâce à l'extrême économie des Arabs qu'ils peuvent servir pour le commerce.[illegible]

Only a decade ago, one hundred years after Paris, men of other lands were still wondering how an Arab sailing fleet could possibly survive in the present era of oil and steam; to satisfy his curiosity Alan Villiers dedicated a year of his life to sailing with the Arabs in their dhows. Villiers has summed up the reasons for the survival of the dhow fleet as follows:

> One reason—perhaps the chief—why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and his vessel pays practically no port dues.[illegible]

While in Aden in 1950, the writer investigated the intriguing problem of dhow economics, as applied to the coastal craft operating around 505

[illegible] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra–Européens* (Paris, Bertrand, [1841]), p. 9. '. . . the Arabs who man them, accustomed to the periodic reversal of the monsoons, carry out, in general only one voyage a year . . . they understand commerce well; in spite of that, they are rarely employed by Europeans . . . and, as they carry only very poor cargoes, it is only because of the extreme economy of the Arabs that they can be of use for commerce.' 113

[illegible] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 400-401.

THE PEARL FISHERIES OF THE PERSIAN GULF

Richard LeBaron Bowen, Jr.

228 THE MOST COLORFUL and widely publicized marine activity of the Persian Gulf is pearl fishing. Since time immemorial the Persian Gulf has been noted for its pearl beds, and Bahrein Island has always been famous for the best pearls. Virtually every ancient and early geographer or traveler writing about the Persian Gulf mentioned pearls and Bahrein Island. An ancient cuneiform tablet found at Ur of the Chaldees, and dated about 2000 B.C., refers to "a parcel of fish-eyes" from Dilmun; some scholars have interpreted this to mean pearls from Bahrein Island. Pliny, writing in the first century A.D., states that Tylos (the classical name for Bahrein Island) "is famous for the vast number of its pearls." *The Periplus of the Erythraean Sea,* written by a Greek sailor about 60 A.D., mentions the Persian Gulf, "where there are many pearl fisheries." An Arab writing in 1050 A.D. states that "pearl fishing is carried on in the sea of Bahrein." In 1583 Ralph Fitch, an English merchant, visited the then famous island of Hormuz in the Persian Gulf and stated that there were "great stores of pearls which came from the Isle of Baharim, and are the best pearls of all others." Such a continuous record of fame is certainly extraordinary. If the "parcel of fish-eyes" sent to the Babylonians was actually pearls, it recorded the start of a continuous 4,000 years of testimony as to the quality of the Persian Gulf product.

000 The factors governing the value of a pearl are multitudinous

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● 114 ◆ Richard LeBaron Bowen, Jr. is a professional chemical engineer with an intense interest in the Arabian Peninsula. He worked for the Arabian American Oil Company from 1945 to 1947 in Saudi Arabia. In the winter of 1950, he was Technical and Engineering Adviser to the American Foundation for the Study of Man Arabian Expedition, which conducted archeological excavations in South Arabia. Dr. Bowen has already published two books on his scientific researches in Saudi Arabia: *Arab Dhows of Eastern Arabia,* and *The Arabian Necropolis of Ain Jawan.* He has additional articles on dhows and Persian gulf marine industries appearing this year.

SOME ASPECTS OF THE ARAB DHOW TRADE

Alan Villiers

K 505 439 AT THE end of 1939, there were 106 large ocean-going dhows on the registry of the Persian Gulf port of Kuwait. They averaged about 100 tons, the largest being 300 and the smallest about 75 tons, by European standards. Their average value, at that time, was perhaps 10,000 rupees, the approximate equivalent of $3,000. They made trading voyages with Iraqi dates, loaded in the Basra river, to the coasts of India and East Africa, generally making either two Indian, or one East African, K MA 439 voyage annually. The majority were in the trade to India, with an occasional diversion to East Africa. From India they were accustomed to bring back shipbuilding materials, coir for cordage, and Malabar teak; from East Africa they brought mangrove poles from either the delta of the Rufiji River, in Tanganyika, or K 342 from the port of Lamu, in Kenya Colony. These poles were used for building, and the dimensions of the rooms in most of the Kuwait houses depended upon the length of the mangrove poles brought from East Africa.

K 505 312 396 In addition to these deep-sea dhows, there were also, at that time, between 100 and 150 pearlers, and some 50 or 60 smaller dhows in the local trade to the Basra river, many of them engaged in bringing fresh water (for Kuwait has no satisfactory supply of its own). New vessels were building at the rate of two or three a month, for deep-sea, and a similar number for coastwise K MA 396 439 trade.

The port of Kuwait was then, and is still, the principal dhow-

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▼ ALAN VILLIERS, deep-sea sailor and author, spent over twelve months in 1938–39 studying firsthand the Arab dhow trade of the Persian Gulf and the coasts of southern Arabia and East Africa. His experiences are described in his *Sons of Sinbad*, published in 1940; Mr. Villiers here presents further information on the social and economic aspects of the trade.

* * *

The Dhow Sailor[1]

BY RICHARD LeBARON BOWEN, JR.

I

487 SINCE time immemorial, cargo has been transported in sailing ships up and down the South Arabian and the East African coasts. As the medieval Sinbads and the ancients before them had done for countless centuries, so are the Arabs, Indians, and Persians today transporting cargo in sailing ships up and down these same shores. Today these sailors operate the last great fleet of deepwater sailing ships in the world, and because of the special circumstances, this fleet will probably sail on for many more centuries oblivious to the changing pace of life around it. Life for these modern sailors has changed little in the thousand years that have passed since the adventures of Sinbad the Sailor were recorded in *The Thousand and One Nights*.

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132 The Arabs, Indians, and Persians are still able to sail their fleets of

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[1] Credit for this article belongs in large part to Mr. Frederick Hunt, who, after reading the author's 'Arab Dhows of Eastern Arabia' in THE AMERICAN NEPTUNE, wrote to the Editor and asked if a follow-up might be possible, 'telling something of actual life aboard a dhow, how the crew lives, watches they stand, living conditions, what they eat, their wages, etc.' Mr. Hunt's outline has been followed almost to the letter, with some additional material added to round out the study.

Shortly after the first draft of the article was finished, the writer was very fortunate to become a member of the American Foundation for the Study of Man Arabian Expedition, which conducted archaeological investigations in South Arabia during the winter of 1950. Almost a month spent at Aden and on the south coast of Arabia, enabled the writer to collect much valuable additional first-hand data on the life of the dhow sailor. The writer is indebted to Mr. Wendell Phillips, leader of the expedition, for his assistance in making this particular phase of the study possible. The writer is deeply grateful to Prof. W. F. Albright, vice-president of the American Foundation for the Study of Man, for his guidance and assistance in numerous details in the work. The writer is also indebted to Dr. Philip K. Hitti for valuable advice on certain points.

In doing any work on the subject of dhows, one must consult what Alan Villiers has written on the subject. By sailing with the Arabs on their dhows for almost a full year Mr. Villiers has obtained an intimate picture of the dhow that the casual observer will completely miss, or the serious worker may not be able to get, as the Arabs are rather suspicious of Europeans who investigate their activities too closely. The writer of this present article has drawn on Villiers' material to round out certain aspects of this article and to supply various facts and figures for which Villiers alone is the source. Most of such material has been taken from his entertaining book, *Sons of Sinbad* (New York: Charles Scribner's Sons, 1940), which in further reference will be abbreviated to A. Villiers, *SS.* 113

A description of the various types of dhows mentioned by their Arabic names in this article will be found in R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 87-132, and R. LeB. Bowen, Jr., *Arab Dhows of Eastern Arabia* (Rehoboth: Privately printed, 1949).

426 465 clean-cut in Villiers' case, as all the shares of the *nakhoda* and the mate come from the crew's half of the net earnings. On the 240-ton *sambuk El Wafi,* which I boarded in Aden in 1950, the shares were as follows:[39]

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	4	1	4
Serang (mate)	2	1	2
Sukhani (quartermaster or helmsman)	1½	3	4½
Muqaddam (boatswain)	1¼	1	1¼
Katib (clerk)	1½	1	1½
Wakil (steward)	1¼	1	1¼
Bahri or *mallah* (sailors)	1	33	33
Total shares			47½

In India some crews are paid on a salary basis, but many others work on a share basis. However, in India the owner takes one-third of whatever the ship earns. Then the craft's expenses while she was at sea and the supplies for the crew are deducted from the remaining two-thirds; the remainder is then divided among the captain and crew according to shares.[40] By dividing the profits in this manner the Indian owner gets about a quarter less than the Arab, while the Indian crew gets about ten per cent more.

471 426 465 The largest importer and exporter in Aden, and probably the whole Gulf of Aden for that matter, is A. Besse and Company, operated by a shrewd Frenchman, Mr. Antone Besse. Among Besse's various holdings in the Middle East are twelve dhows, all registered in Aden. The *El Wafi* was one of the twelve *sambuks* owned by A. Besse, and operated in the Gulf of Aden and the lower Red Sea. On the average these dhows made four trips a month. The *nakhoda* was given advances, which he in turn gave to the crew, before each trip. After four trips the gross return for

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505 104 114 [39] It will be noted that the Arabic names in Villiers' list of the members of the crew on a Kuwait *bhum* and in my list of the members of the crew of an Aden *sambuk* are not the same; however, this does not mean that either is necessarily wrong. The Arabic names on my list were checked from three independent sources in Aden, and my informants in Aden recognized Villiers' *muʿallim* as the word the Kuwaiti used for 'mate.' Villiers indicated on his list 'quartermaster' but did not give the Arabic for the word. The Arabic word that I found in use in Aden for this member of the crew was *sukhani,* which comes from *sukkan,* the Arabic for 'rudder.' Thus it would seem that the more proper translation of the word is 'rudder-man' or 'helmsman,' although his position on the dhow is really that of 'quartermaster.' The word *muqaddam* is the word commonly used on land to refer to a 'headman' who is the leader of any other group of working-men. However, on a dhow the *muqaddam* is the man who superintends the letting go and the weighing of the anchor, so the translation of the word when applied to seafaring men is properly 'boatswain.' The important fact evident from the two lists is that there is always a consistency in the top officers of a dhow—there are a captain, a mate, three quartermasters (or helmsmen), and a boatswain, irrespective of the Arabic name by which they are known.

[40] K. B. Vaidya, op. cit., p. 41.

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228 THE MOST COLORFUL and widely publicized marine activity of the Persian Gulf is pearl fishing. Since time immemorial the Persian Gulf has been noted for its pearl beds, and Bahrein Island has always been famous for the best pearls. Virtually every ancient and early geographer or traveler writing about the Persian Gulf mentioned pearls and Bahrein Island. An ancient cuneiform tablet found at Ur of the Chaldees, and dated about 2000 B.C., refers to "a parcel of fish-eyes" from Dilmun; some scholars have interpreted this to mean pearls from Bahrein Island. Pliny, writing in the first century A.D., states that Tylos (the classical name for Bahrein Island) "is famous for the vast number of its pearls." *The Periplus of the Erythraean Sea,* written by a Greek sailor about 60 A.D., mentions the Persian Gulf, "where there are many pearl fisheries." An Arab writing in 1050 A.D. states that "pearl fishing is carried on in the sea of Bahrein." In 1583 Ralph Fitch, an English merchant, visited the then famous island of Hormuz in the Persian Gulf and stated that there were "great stores of pearls which came from the Isle of Baharim, and are the best pearls of all others." Such a continuous record of fame is certainly extraordinary. If the "parcel of fish-eyes" sent to the Babylonians was actually pearls, it recorded the start of a continuous 4,000 years of testimony as to the quality of the Persian Gulf product.

000 The factors governing the value of a pearl are multitudinous

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0.00 and set by arbitrary standards. A first grade pearl should have a perfect "skin," i.e., be free from flaws and specks, and should have a fine "orient," that is, a delicate texture of translucent pink or cream color with an irridescent luster. It is difficult to say whether the size, shape, or color of a pearl is the more important. Other qualities being equal, a perfectly symmetrical pearl is more desirable than a pear-shaped or a flat one. There are pearls of all colors —white, black, gray, green, yellow, gold, and pink. The size of the pearl is important only in combination with a desirable color and shape. Luster is probably the most important characteristic of a first-class pearl; other qualities can be more or less lacking if the pearl has good luster or depth. The most perfect pearl in existence is said to be one in the Zosima Museum in Moscow, known as "La Pellegrina," weighing 28 carats. The largest known pearl is an irregularly shaped one in the Victoria and Albert Museum, having a circumference of 4.5 inches.

The value of a really rare pearl increases by leaps and bounds from purchaser to purchaser. A single example is a Persian Gulf pearl purchased by Barbara Hutton for $75,000; the pearl originally sold for $30,000. It is not necessarily on the spot where the pearl is produced that it is most cheaply procured, and if procured, of the finest quality. Arabs in the Persian Gulf know that the Best Gulf pearls may be purchased most cheaply in India. Peddlers may be found in most towns on the Persian Gulf with necklaces of Gulf pearls for sale; however, these have usually been imported from Bombay.

VALUE OF PERSIAN GULF PEARLS

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The annual value of the Persian Gulf pearl fisheries is difficult to estimate exactly, as there are no published figures and the season's crop is not shipped out through any single port. Figures published by some authors are actually only the value of the pearls passing through Bahrein Island. However, as close to 90 percent of the Gulf pearls do pass through Bahrein, these figures give a rough estimate. The earliest figure known dates back to the early 19th century; Wilson stated in 1833 that the value of the pearls produced at Bahrein amounted to from £200,000 to £240,000, while the value of the whole fisheries was about

£300,000.[1] Wellsted stated that in 1835 the total value was 228
£400,000.[2] Zwemer stated that the value of pearls shipped from 439
Bahrein in 1896 was £303,941.[3]

Cox gives the value of pearls exported in 1925 as £220,000 from Bahrein and £9,000 from Lingeh in Iran, and for 1926 as £192,000 from Bahrein, £11,000 from Kuwait, and £5,200 from Lingeh (a total of about £208,000 for 1926); Cox further states that the true value was probably ten times these figures, for reasons he fails to clarify.[4] However, Thornburg has accepted this last statement of Cox's as a fact and has arrived at a figure of $10 million for the value of the Bahrein fisheries in 1926,[5] a figure that is unreasonably high. Thornburg estimates that in the years immediately following World War II the value of the Bahrein pearl fisheries was about $250,000; Kruegar states that in 1949 the value of the Bahrein pearl fisheries amounted to $200,000.[6] Rihani gives figures for the whole Gulf which amount to about $15 million,[7] the most absurd value published.

A summary of the more reliable figures would seem to be as follows:

1830's	$1,500,000
1835	2,000,000
1896	1,500,000
1925	1,200,000
1926	1,000,000
1946	250,000
1949	200,000

As can be seen from the above table, the value of the fisheries 228
dropped to only a fraction of its previous value after the world 439
depression of the thirties. It should also be pointed out that due to 435
world inflation the figure of $200,000 for 1949 represents less than $100,000 on 1926 monetary standards. However, while the depression dealt the Gulf pearl fisheries a devastating blow, its

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[1] D. Wilson, "Memorandum Respecting the Pearl Fisheries in the Persian Gulf," *Geographical Journal*, III (1883), p. 284.

[2] James R. Wellsted, *Travels in Arabia* (London, 1838), p. 264.

[3] Samuel M. Zwemer, *Cradle of Islam* (New York, 1900), p. 100.

[4] Percy Z. Cox, "Persian Gulf," *Encyclopedia Britannica* (Chicago, 1946), vol. 17, p. 603.

[5] Max Thornburg, "Bahrein," *Encyclopedia Americana* (New York, 1949), vol. 3, p. 48a.

[6] H. C. Kruegar, "Bahrein," *Collier's Encyclopedia*, II (New York, 1949), p. 668.

[7] Ameen Rihani, *Around the Coasts of Arabia* (London, 1930), p. 275.

228 continued decline cannot be laid at its door. Japanese cultured
439 pearls first started to appear on the market in quantities in the
435 twenties just before the depression. As time has gone on the competition they offered has tended to become less and less, but on the other hand, the world demand for this gem has reached an all-time low, mainly because of the effect of the cultured pearl.

228 The introduction of cultured pearls and artificial pearls alike
435 has had far-reaching effects on the natural pearl market. While they do not compete insofar as price is concerned when they are recognized as cultured, it takes an expert to distinguish them. Thus, the net effect of cultured pearls, and even more so of the expertly fabricated synthetic pearls, has been to cheapen the pearl as a precious gem in the eyes of those who wear them. There are actually some women who prefer cultured pearls, which are usually more uniform. As a result, natural Gulf pearls do not bring a tenth of what they did a quarter of a century ago at Bahrein.

228 It is a strange fact that even though a cultured pearl is worth only a few percent of the value of real pearls, there are few pearl merchants in the Persian Gulf who can tell a good cultured pearl from the Gulf pearl without destroying the two in the effort.[*] Radiography (x-ray), x-ray diffraction, fluorescence under x-ray radiation, or specific gravity determinations, alone or in various combinations, may be used to detect cultured pearls, but these physical tests are not used by the Arabs for obvious reasons.

228 One might ask why cultured pearls have not been "introduced"
654 into the Persian Gulf pearl market by divers, captains, or merchants. The Arab will tell you that this is improbable. The importation of cultured pearls into the Persian Gulf is prohibited, and in fact carries a severe penalty. The oysters are opened in sight of the divers, so they all know how many exceptional pearls the *nakhoda* (captain) receives and thus what exceptional pearls

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[*] One of the world's leading authorities on the differentiation of cultured and natural pearls by their physical properties, Dr. A. E. Alexander, visited the Persian Gulf in 1947 to study the pearl fisheries and took with him a number of fine cultured pearls which he showed to a group of about thirty Bahrein pearl dealers. These Arabs had never seen a cultured pearl, whose importation is normally prohibited, and were astounded at its quality.

the owner in turn receives. Such fraud as the introduction of 228
cultured pearls, if detected, would bring out the headman's ax, 656
for Arab laws are severe in this respect. But as there are always people willing to make a dishonest dollar or rupee—and the Arabs are certainly no exception—it is inconceivable that cultured pearls, carefully chosen for their similarity to Gulf pearls, have not at times been smuggled into the Persian Gulf. If the Arab merchants cannot detect them, there are probably few experts who could without the aid of delicate and elaborate electrical instruments.

OYSTERS AND OYSTER BEDS

825 Arab lore in the Gulf relates that the young shell-less oysters come to the surface when it is raining, or when the moon is full. The raindrop is the father of a good pearl and the oyster the mother, while the moon produces luster. A poor season is attributed by many to a shortage of rain. Al-Qazwini, author of *The Wonders of Creation,* gives a different version: the north wind carries a mist containing a viscid substance similar to mercury from the Caspian Sea to the Gulf; the oysters draw in this substance, a large drop forming a large pearl.[*] But every Arab has his own explanation of the phenomenon, and believes that the true scientific explanation is just fantasy.

228 According to O'Shea, three types of pearl oysters are found in the Persian Gulf, known to the Arabs as *mahharah, zanniyah,* and *sadaifiyah*. The *mahharah* are the commonest, growing to two or three inches in diameter, and producing 98 percent of the pearls found in the Gulf. The *sadaifiyah* is a rare find and seldom yields pearls; it grows to great size (six to eight inches in diameter) and is often collected for its mother-of-pearl. The *zanniyah* is found in the vicinity of the Ras al-Khaymah in Oman; no details of this oyster are given. In the Red Sea two varieties are commonly found: the large oyster, known as the *balbil,* and the small, known as the *sadaf*. The pearl itself is known as *lulu* to the Arabs in the Persian Gulf, irrespective of the species of oyster from which it comes, while the Persians know it as

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[*] A. Rihani, *op. cit.*, p. 277.

228 *mawarid*. O'Shea relates that in Oman the pearl is commonly referred to as *qumash,* which is also Arabic for "material" or "goods."[18]

228 Pearl-bearing oysters are found in most of the Persian Gulf
133 waters in depths varying from just below low tide to 20 fathoms. On the Persian side of the Gulf the bottom falls off rapidly to the 50-fathom maximum in the Gulf. On the Arabian side the bottom slopes off gently so that there are extensive areas within the 20-fathom limit. Thus, there are few pearl oysters on the Persian side, although fine pearls have been reported from near Kharaq Island off Bushire, and from Lingeh, but these are exceptions. However, extensive pearl beds are found along the Arabian side, stretching almost continuously for 700 miles from near Ras al-Khaymah east of Sharjah on the Trucial coast, to Ras al-Misha'ab south of Kuwait, the best beds being between 5 and 10 fathoms. The most productive are located to the north and east of Bahrein Island; this is probably why Bahrein has been the pearl center of the Persian Gulf. However, Dr. A. E. Alexander, a leading authority on pearls who visited the banks in 1947, estimates that only 35 percent of the Gulf pearls come from around Bahrein Island; the remainder comes from the Trucial Coast and from the banks near Kuwait.

228 The success of any pearling season seems to be as unpredictable
502 as the habits of the pearl oysters themselves; the oyster beds shift
periodically so that their exact location is not known until the
825 diving starts. Sometimes the pearls are plentiful and valuable, at other times they are neither. Sometimes a bank is sterile for several seasons; then the next it may yield all the highest quality pearls. None of the banks are charted; each *nakhoda* has his own knowledge of them and his own theories. Arab experts believe that the largest, most dense, and whitest pearls come from deep water, while shallow water yields only low density pearls tinted with some color. Some of the more pessimistic Arab observers claim that the Persian Gulf fisheries never yield over two first-quality necklaces in any one season.

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[18] Raymond O'Shea, *Sand Kings of Oman* (London, 1947), p. 133.

THE PEARLING FLEETS

502 228 The bulk of the main pearling fleets sticks together, the Kuwait fleet moving down the coast while the Bahrein fleet moves up. The pearlers of the Trucial Coast follow the banks from Ras al-Khaymah to Qatar, a straight-line distance of over 400 miles. The Oman pearlers never go above Halyl Island; they work various areas around the islands in small fleets of 10 to 20 boats, the smaller vessels usually working the grounds nearest their home ports. A pearler assumes a position on the edge of a bank so that by paying out anchor line it will drift across the bank. When the divers begin to bring up only a few oysters, the boat is allowed to drift to a new position. After it has worked completely across the banks, the crew moves it back with the sweeps, to chants and drum beating. It is here that the true skill of the *nakhoda* comes into play — to keep his ship over virgin beds. When day ends the large ships stay on the beds and the crew settles down for the night; the smaller ships usually make for a protected anchorage.

228 464 Estimating the number of dhows and men employed in the Persian Gulf pearl fisheries is similar to estimating the population of the Arabian Peninsula. The published figures are largely based on Arab guesswork; most of them are probably much too high. Registers of a sort are kept in every town and port along the coast sending boats to the fisheries, so that figures do actually exist. But these are not published, and an accurate count would necessitate a survey of the whole long Gulf littoral.

In one of the earliest European references to pearling in the Persian Gulf, Niebuhr states that in 1763 the inhabitants of Kuwait lived by the fishery of pearls and fishes, and were said to employ more than 800 boats in these tasks.[11] Over half a century later, Wilson estimated that the pearl fishing boats on Bahrein amounted to about 1,500.[12] In a short account of pearling on the Trucial coast, Whitelock states that in the 1840's there were said to be something over 3,000 boats in the Gulf fisheries.[13] Whitelock adds that the smallest boats had 5 men and the

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[11] Carsten Niebuhr, *Travels Through Arabia* (Edinburgh, 1792), p. 127.

[12] D. Wilson, *op. cit.*, p. 285.

[13] H. H. Whitelock, "An Account of the Arabs of the Pirate Coast," *Trans. Bombay Geographical Soc.* I (1844), pp. 42, 45.

228 largest about 18; but as the smaller boats were the more numer-
464 ous, he used 9 as an average to arrive at a total of 29,000 men
employed in the pearl fisheries.

Zwemer estimated the number of pearling boats out of Bahrein in 1896 as about 900, those out of Qatar as 200, and total number of boats as 5,000, employing 30,000 men.[14] However, the figure of 900 does not seem to justify the total of 5,000; since Zwemer lived on Bahrein Island the figure of 900 would seem to be the more accurate. Zwemer is apparently responsible for the figure of 5,000 dhows in the pearl fisheries which has appeared in print so frequently since: Villiers and Simpich state that there were 5,000 boats at the turn of the century, employing 80,000 men,[15] while O'Shea states that in normal times there are about 5,000 boats employing 74,000 men.[16]

Evaluating these estimates and others not mentioned, one is led to the conclusion that there were never over 3,000 boats engaged in the Persian Gulf pearl fisheries, and probably not over 40,000 men. Taking the figures that may be considered as relatively reliable, we arrive at the following average for the fleet during the boom years:

Bahrein (Zwemer)	900
Kuwait	600
Qatar (Zwemer)	200
Eastern Arabian ports	200
Trucial coast (Whitelock)	700
Persian ports (Whitelock)	100
	2,700

This figure would seem to be a fair estimate for the size of the pearling fleet at the turn of the century, and if anything is on the high side

228 The first few decades of the present century were the last
464 prosperous years that the Gulf pearl fisheries saw. Whereas, at
178 the turn of the century there were almost 3,000 boats engaged
in the fisheries, today there are hardly one-fifth that number. An

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[14] S. M. Zwemer, *op. cit.*, pp. 100-101.

[15] Alan Villiers, *Sons of Sinbad* (New York, 1940), p. 373; Frederick Simpich, "Rise of the New Arab Nation," *National Geographic Magazine*, vol. 36 (1919), p. 388.

[16] R. O'Shea, *op. cit.*, p. 132.

estimate of the number of boats operating in 1946 would be as 228
follows: 464

Bahrein	150	178
Kuwait	100	
Darin, Qatif, Jubail	30	
Trucial coast, Qatar, and Persian ports	250	
	530	

Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the 228
coincidence of the pearling season with the date harvest. Starting 245
about June there is a migration of men northward from the
Batinah Coast to the Trucial Coast; these men work the pearl 221
fisheries. Some go north in caravans, others sail up in their 462
bedens and other dhows. Opposed to the flood of men who make 464
this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home.

Bertram Thomas states that a considerable percentage of the 228
army of men annually migrating northward to the Trucial Coast 567
is composed of slaves.[17] These Batinah contingents are usually 464
accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.[18]

Pearl fishing is a seasonal occupation, as the divers must wait 228
for warm summer water before starting to dive. Probably few 464
people realize there is a winter in the Persian Gulf, and that 132
the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

[18] Ibid., p. 143

228 for the minimum winter air temperature to be in the middle
464 forties; during this period the sea water temperature in shallow
132 water will be in the low sixties.

228 Pearl diving requires that the diver's body be almost continu-
147 ally in the water. From experience the Arabs have found that
464 the surface water temperature has to be about 85° F. before
132 continued deep-water diving is feasible; thus the main pearling season (*al-ghaws al-kabir*, or "great diving") averages four months—from June into the first week of October. During this time the maximum surface water temperature exceeds 90° F. (in August) off Hasa. O'Shea states that on the Trucial Coast *al-ghaws al-kabir* often lasts until late October, the water apparently remaining warmer longer there than further north.[19] In addition to *al-ghaws al-kabir*, there are two other seasons: the "cold diving" season (*al-ghaws al-barid*) running from April to May, and the *mujannah*, running from October to March. The smaller boats run out in the shallower (warmer) waters for *al-ghaws al-barid* and act as a barometer for the season, while the *mujannah* is worked by waders who work along the shore when the tide is out, many equipped with glass-bottom "look boxes."

527 For *al-ghaws al-kabir* the various fleets, whether from Kuwait,
228 Bahrein, or the Trucial Coast, leave port en masse with flags flying, to the beating of drums and Arab chants. The few boats from the smaller ports slip out without fanfare. It is a stirring sight to see these fleets of dhows maneuver with their sweeps and then set forth under huge spreads of lateen sails, with their freshly oiled, burnt-brown hulls glistening across the aquamarine water, like some ancient Phoenician or Roman fleet.

228 An admiral represents the pearl fishing fleet of each port. It
502 is the admiral's boat which leaves the port first, and the admiral's duty to determine when the water becomes too cold for continuous diving. It is considered improper (by the owners) for the *nakhoda* of any large vessel to leave the pearl banks before the admiral leaves.[20]

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[19] R. O'Shea, *op. cit.*, p. 137.

[20] The admiral of al-Khobar, Saudi Arabia, now works for the Arabian American Oil Company, for al-Khobar no longer sends vessels out to the pearl grounds.

DIVING TECHNIQUE

The rights to the Persian Gulf pearl fisheries are jealously 228
guarded by the Arabs, and these rights have been backed up by 656
the British Government for over a hundred years. They are 685
limited to the inhabitants of the Gulf littoral—Arabs and Iranians. Pearl diving in the Persian Gulf is carried on without the use of any professional diving gear; it is "skin diving." The British have prohibited drags, dredges, and compressed air diving suits or helmets, and there is a 30,000 rupee ($9,000) fine for violation of the law.

However, in spite of this protection, foreigners have dived for pearls in the Gulf, and diving equipment has been used. In 1882 a Bombay syndicate sent a steamer, the *Johnstone Castle,* without official permission to the Bahrein banks. After five days the vessel was arrested by a British gunboat; its yield had been only 23 seed pearls.[21] During the pearling season of 1935 some Italians employed by the Qusaibi Brothers, wealthy merchants of Hofuf, Saudi Arabia, used deep-sea diving suits.[22] Presumably these merchants figured themselves exempt from British proclamations, inasmuch as they were Arabian nationals. But nothing more was ever heard of the venture, so it was either not a financial success or else the British brought pressure to bear against the practice. The Arab customs officials of both Saudi Arabia and Bahrein Island have been extremely suspicious of oil company divers, who spend a lot of time under water inspecting pipelines and piers, and they used to watch them through field glasses to see that they never brought up any oysters.

The maximum depth at which the divers work is about 12 fath- 228
oms.[23] Sweeps are left projecting overboard athwartships and are lashed to the tholepins and the deck. The divers' lines pass over the sweeps so that they will not become fouled. To get to the bottom a diver puts his foot in a loop of rope tied to a stone or iron weight, releases a slip knot holding the rope to the sweep, and holding onto the rope plummets down. The attendant pulls up the stone as soon as he feels it hit bottom. The diver holds onto

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[21] R. O'Shea, *op. cit.*, pp. 140–41.

[22] K. S. Twitchell, *Saudi Arabia* (Princeton, N. J., 1947), p. 26.

[23] A. Villiers, *op. cit.*, p. 374; Hugh Smith, "The Pearl Fisheries of Ceylon," *National Geographic Magazine,* 33 (1912), p. 174; R. O'Shea, *op. cit.*, p. 137.

[285] The diver holds onto another line to which is tied an open-weave palm leaf basket for
228 the oysters; sometimes the diver has the oyster basket tied to his waist or around his neck and has the line tied to his body. When the diver is ready to come up, he gives several tugs on the rope. Thus the diver does not have to waste his valuable energy in swimming up or down. When he first reaches the bottom, he attempts to go out perpendicularly from the boat, frantically plucking all the oysters he can see before his air gives out. The diver usually crawls on one hand and one foot, using the other foot to propel himself and his free hand to collect the oysters.

228 The divers wear a horn noseclip similar to a clothespin; this
292 keeps the water out of their noses and enables them to hold their breath longer. Sometimes a diver will stuff cotton or beeswax into his ears to keep the water out. A set of leather finger thimbles protects his fingers from coral and other sharp objects; he wears only a loin cloth. This is the equipment universally used in the Persian Gulf, whether the diver is out of Kuwait, Bahrein, the
[164] Trucial Coast, or Persia. These divers wear no goggles and many have impaired vision from trachoma, so their efficiency is cut down considerably. It is strange that the Arabs have not added at least eye socket goggles, which the South Sea Island and Philippine pearl divers have eagerly accepted.

228 Alan Villiers states that the Kuwait pearl divers make ten
461 consecutive dives and then rest while a "substitute" makes ten; these two divers have the same attendant.[34] Divers in other parts of the Gulf work continuously, taking a rest all together at certain predetermined times, sometimes corresponding with prayer-time.

The diver stays under about a minute, then rests for two or three.[35] Ten dives would consume about three-quarters of an

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[34] A. Villiers, *op. cit.*, p. 392.

[35] The average length of time that a diver stays under water has long been a controversial question. Alan Villiers (*op. cit.*, p. 392), who spent two months with the Kuwait pearling fleet, states that the divers averaged about a minute, ranging from 40 to 90 seconds. O'Shea (*op. cit.*, p. 137), spending some time among the Trucial coast pearlers, states that divers there remain under water from 40 to 75 seconds, also averaging about one minute. Whitelock (*op. cit.*, p. 43), who visited the Trucial coast pearl fisheries one hundred years ago, stated that the divers averaged about 40 seconds under water, but that he never saw them remain over a minute. Hugh Smith (*op. cit.*, p. 183) states that in the Ceylon fisheries the Arabs are the best divers, staying down from 60 to 75 seconds, with a normal maximum of 90 seconds, and that there is an authentic case of an Arab staying under 109 seconds in seven fathoms of water. In any

hour, after which time the Kuwait diver is dragged out of the 228
water and huddles in some spot on the ship looking more dead 461
than alive. He may average four shifts a day, making a total of
40 dives; O'Shea states that under excellent conditions the
Trucial divers average 50 dives a day.[29] During this time ~~he~~ has spent
almost one hour under water. Ten dives are not difficult, nor
are 50 excessive in one day for anyone experienced; but day after
day and week after week the diving goes on — for four months.
When the season is over, the diver has weathered the impossible; 228
he has probably completed over 3,000 dives in from 30 to 50 feet 461
of water, and has spent over 50 hours under the surface of the 147
Persian Gulf — that is, over a full forty-hour week without air,
valiantly striving to gather all the oysters he can see through his
blood-shot and irritated eyes, which become less sensitive with
each dive.

Every ten days or so the divers do get a day of rest, and if the 228
shamal is blowing they have to wait it out, as it roils the water. 461
Occasionally they have to go ashore to bury a diver who fails 147
to complete his 3,000 dives. It is not surprising that there are 164
one or two empty stations on each boat; their occupants lie
huddled corpse-like under their cloaks in some part of the ship,
too sick from scurvy or plain fatigue to dive. After they have been
at it for many weeks, the divers are apt to get convulsive shivers
when they come out of the water for their rest, even though the
temperature may be 110° F. and their tenders are covered with
a lather of sweat. There are few, if any, white men who could [771]
endure just one day of such punishment; the Arab could not
either except for his belief that Allah is merciful and that a
Paradise awaits him.

Every dhow has to put in for water and food every three weeks 228
or so. In recent years the pearling fleet has used the oil company's 312
pier at Ras Tanura for water, but vessels have been known to
replenish their water supply from some of the submarine springs
which gush into the Persian Gulf. A diver goes down with an [415]
empty skin and opens it in the potable stream; he can bring up
fairly fresh water by this means. One of thse submarine springs,

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case stories one hears about the amazing power of the Arabs to stay under water from 5 to 10 minutes or more are absurd.

[29] R. O'Shea, *op. cit.*, p. 137.

[302] One of th[e]se submarine springs,
228 located a few miles north of Jubail, has been marked by a spar
312 buoy by order of King Ibn Saud.

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165 O'Shea states that while the divers on the Trucial Coast are rarely attacked by sharks, about 30 were attacked and two killed around 1940.[27] Whitelock states that the Arabs claimed that the danger of sharks was ever present, but that their worst fear was from the saw fish, which had been known to cut divers completely in two.[28]

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136 Rihani writes that what the Persian Gulf pearl diver dreads most is the *dawl*. However, he apparently does not realize what the *dawl* is, merely quoting Sheikh Khalifah ibn Muhammad al-Nabhani's *History of Bahrein:* "The *dawl* is a semi-fluid animal, about the size of a man's hand, round in shape, with a multitude of tendons about two feet in length, resembling a network of silk. It has no power of locomotion, but is driven by the waves and currents hither and thither. If it comes in contact with the body of man, it burns it, leaving a deep scar; and if it is lifted out of the water and left in the sun for five minutes, it dissolves."[29]

The zoologist will immediately recognize this description of the *dawl* as a jellyfish. It is in fact a small bell-shaped jellyfish with two to three foot-long tentacles. The *dawl* swims at any level and is practically invisible underwater; thus the divers cannot keep away from the stinging tentacles, which will burn the body and can put out an eye. Along the Ras Tanura peninsula, the *dawl* is most often seen near the surface shortly before flood tides.

136 There is a species of needle urchin (*Diadema*) in the Persian Gulf with spines from one or two feet long.[30] It is known that these spines will produce nasty slow-healing wounds if bumped into under water. This urchin may be the cause of some of the open sores on the divers' legs, although salt water alone could cause them, for the Persian Gulf has the highest salt content of all the ocean bodies, and constant immersion in salt water is known to produce a rash. However, as the *Diadema* is black and several

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[27] *Ibid.*, p. 138.

[28] H. H. Whitelock, *op. cit.*, p. 43.

[29] A. Rihani, *op. cit.*, p. 280.

[30] *Diadema* was first reported from the Persian Gulf by this author: A. H. Clark and R. LeB. Bowen, Jr., "Echinoderms of Saudi Arabia," *American Museums Novitates*, No. 1390 (1949).

feet in diameter, it is easily seen under water, and thus more 136
easily avoided than the *dawl*. The Arabs have no fear of the sea turtle and they relate that when they find one of these on the pearl banks, they ride it to the surface by grabbing it behind the neck and directing it upward.

But the dangers from sharks and devilfish (rays) are slight 164
compared to the physical danger resulting from simply driving 147
oneself past the limit of human endurance. The "bends" are a 752
common affliction among the divers and may cause severe pains in the joints, paralysis, or even death. Suppuration of the eardrums and rheumatism are also common. The divers may lose blood from surfacing too quickly or from staying under too long; Frederick Simpich tells of seeing a man come up from a 10-fathom dive bleeding at the nose as if someone had hit him with a ball bat.[81] Whitelock states that the divers of the Trucial Coast were very emaciated and suffered from inflamed eyes, which they treated with antimony.[82]

Divers never eat while working, except for a sip of tea or 262
water, as food would cause nausea. When the sun has sunk so 147
low that diving stops, they eat a few dates or a little rice and drink a little tea, but that is all. This is one of the reasons why they become so weakened and emaciated during a season. Sleep is the only energy builder the divers have.

OPENING THE OYSTERS

With dawn the first activity of the day is the opening of the 228
oysters caught the day before. By this time the oysters have been out of the water long enough for their shells to open, so that one does not have to fight them. The oysters are not divided according to divers, but are simply piled in sacks on the deck, so that no one knows exactly who caught the one that may contain the great pearl. After the valves are parted, the openers knead through the flesh, extract any pearls, and throw the shells and the meat overboard. Less than one-third of the oysters yield pearls and these are mostly "seed pearls," those very small irregularly-shaped pearls which might well be called "pearl dust."

[81] F. Simpich, *National Geographic Magazine*, vol. 36 (1919), pp. 369–93.

[82] H. H. Whitelock, *op. cit.*, pp. 38, 44.

228 The captain watches the whole procedure closely to see that no pearls are secreted; when the last oyster is opened, he collects all the pearls, ties them in a small red cotton flannel cloth, and puts them in his sea chest on the poop deck.

The Persian Gulf procedure for opening the oysters is in vivid contrast to the practice of some of the other pearl fisheries. In Ceylon, for example, all the oysters for any one day are brought into the yards of the company holding the concession to the banks. Each diver carries his own oysters up to the stockaded compound where he divides them into three piles. The company inspector comes around and tells the diver which pile he can take; when he leaves the compound he has to give back a portion to his attendant and to the captain of the boat.

There is evidence that some such practice may have been carried out along the Arabian coast in the past. A century ago the pearlers of the Trucial Coast opened their oysters on land, for Whitelock relates that the pearlers remained at sea until they had a boatload of oysters and then proceeded to the nearest island to open the shells.[illegible]

228 172 During medieval times the Arabians on the mainland controlled Bahrein Island; their capital was at Hofuf. Huge heaps of oyster shells, some a hundred yards long, stretch along the shore a mile south of al-Khobar. Nearby have been found grinding pestles, stone diving weights, and crude pottery fragments. The species of oyster in these mounds is the same small variety commonly found today. When the refinery at Ras Tanura was being built, a low hill was leveled by bulldozers. Cutting through many ancient graves they turned up a stone diving weight among the numerous bones and pottery. Between Jubail and Ras Tanura, several more ancient shell heaps have been located high on the beach. Some of these are composed *entirely* of the large plate-sized species of pearl oysters; now this species is found only occasionally.

MARKETING AND DIVISION OF PROFITS

228 437 The majority of pearls are sold to Bombay merchants, but frequently brokers in search of a bargain will buy the best before

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[illegible] *Ibid.*, p. 42.

the dhows leave the banks. These men wander through the fleet 228
in their own boats (usually launches) always trying to get to a 437
first quality pearl before the other brokers hear of it, and always hoping that the *nakhoda* will not recognize its value. The broker's paraphenalia consists of a magnifying glass, a small 413
hand balance, weights, and a set of brass screens for grading the pearls. When pearls are sold on the banks they are ceremoniously transferred from the captain's red bunting to the broker's.

Regardless of where they are sold, the majority of the pearls 228
go to Bombay, and from Bombay eventually to Paris, the world's 439
pearl emporium. Pearls are usually shipped to Bombay by air. 456
The reason is simple: Usury and insurance are prohibited by the 784
Quran. If the pearls were shipped to India by Arab dhow or steamer through an Arab agent, there could be no insurance on the consignment. However, if the pearls are shipped via Trans World Airline or British Overseas Airlines Corporation, the pearls can be heavily insured. Thus, the Arabs use a Western agency to get around the Quranic prohibition. In Bombay, Indian workers skillfully pierce the pearls with fine bow-driven drills and string them on silk, graded according to color and size. The pearls are sold to European dealers in bunches consisting of a number of strings and generally known as "Bombay bunches."

When the season has ended and the pearls are sold, the captain 228
deducts the cost of the food and provisions. What is left repre- 465
sents the profit. Of this the owner of the dhow gets one-half; of the remainder each diver and each attendant gets one share and the captain two. Most of the dhows leaving Saudi Arabian ports are small (not over 40 feet) with small crews—usually something like 6 divers, 4 attendants, and a captain. Thus, each diver and attendant would get one twenty-fourth (about 4 percent) of the profits, and the captain would get one twelfth (about 8 percent). The pearling dhows operating out of Bahrein and Kuwait are generally much larger than the Saudi Arabian dhows, and may have crews of 40 or more. The profits of these craft are split in much the same way as the profits on smaller dhows, but the captain gets more shares with these larger crews than he does with the smaller.

ECONOMIC RELATIONSHIPS

228 426 Pearling is a great gamble for everyone concerned. A share may be worth only 50 or 100 rupees if the take has been poor, but on the average a share should net at least several hundred rupees. It must be remembered that a share usually represents a year's earning, since the pearling industry operates on the "debt system." This is not to be confused with the "truck system," for the workers in the Persian Gulf pearl fisheries are not paid in produce. In the debt system the divers and tenders get actual cash advances during the seasons they are out of work, and their families get food and supplies while they dive. They must pay off their incurred debts with their earnings after the pearling season, but somehow they never seem able to get free.

228 426 672 Until recently, a diver who accepted cash advances from a *nakhoda* had doomed himself to diving until death, and unfortunately death might not be an exit, as his debt was simply passed on to his son or brother, who then went on to incur his own debt. Once in debt a diver is prohibited from hiring to another *nakhoda*—he must repay his debt to the man who gave him cash advances. A diver or anyone else who accepts an advance in the pearling industry has sold himself to economic slavery, for the *nakhoda* owns his ability to work, while the man must support himself. Thus, a diver is bound to return to the purgatory of pearling at the *nakhoda's* call. Since Muslim law prohibits interest or usury the debt system effectively gets around this. The *nakhoda* is usually in turn bound to some merchant in the same way, for he has taken cash advances to give to his divers and attendants.

567 465 In Oman the *nakhodas* often hire their labor from a tribal agent, giving the agent an advance of money and rice. In the case of slaves, the agent takes this to the slaves' master; at the end of the season he collects the balance of the slaves' earnings. Thus the slaves' earnings go completely to his master, who in return clothes and feeds him.

228 656 426 On Bahrein Island the Bahrein Government has, at the suggestion of the British, effected many reforms in the pearling industry with respect to the debt system. Hereditary debts have been abolished; pearl divers on Bahrein now take their debts to

their graves, and justly, too, for diving probably hastened their 228
end. The Government demands that account books be given each 656
diver and that they be kept up properly, and sends inspectors to 426
see that they are. Before the season begins at Bahrein the amount of cash advances is agreed upon and proclaimed. The divers have put up a terrific objection to this limitation, for it seemed to them that they were simply getting less money. They could not understand that their debt was being lowered—in fact they did not care, for hadn't they always been in debt?

There is a "diving court" which enforces the arbitrary laws 228
of the industry, such as those dealing with engagement of labor, 698
taxes, spurious pearls, etc. The court also disposes of any case of 686
a *nakhoda* who cannot pay off his debts; the *nakhoda* may lose his boat and divers, but not his personal property.

There has never been any noticeable effort on the part of the 651
ruling sheikhs to better the lot of their subjects: if they were un- 464
employed for long periods in the winter they would be sure to 461
work harder during the pearling season to pay off their winter's
debts. As the local sheikhs levy a tax on every boat and get a cut 426
of some sort on the proceeds, the pearlers in a sense work for them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a farmer, fisherman, or herder there would be little incentive to enter the pearling purgatory. Under normal conditions the divers have an eight months' loaf during which time they live off their *nakhoda;* this is to the liking of both the diver and the *nakhoda.*

However, many divers do find other work, as fishermen or 463
mariners. The depression of the thirties hit the Persian Gulf 464
pearl industry with great suddenness. Within a short period tens 505
of thousands of pearlers in the Gulf found themselves without an occupation. The marine stock of Kuwait rose to the situation and gradually shifted to cargo hauling between Kuwait and
Basra, Iran, India, South Arabia, and East Africa. Large ocean- [501]
going double-ended dhows have carried the fame of Kuwait seamanship throughout the Middle East, sailing to Africa on
one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

464 maritime *nakhodas* are having difficulty in getting crews. Many of their sailors, who also operated under the debt system, are now working for oil interests.

464 315 On Bahrein oil began to be developed as early as 1932, just when the pearl industry started its real slide. Oil come late for Saudi Arabia, and it was not until 1945 that the industry absorbed large numbers of native laborers. By then the town populations were so well adjusted that most of the labor came from the desert Bedouins. These jobs with the oil companies at first absorbed the unemployed, but as the oil projects developed they have absorbed more than the unemployed, until now the *nakhodas* of Bahrein, Kuwait, and Saudi Arabia are having an increasingly hard time finding divers; the divers are working for the oil companies and paying off their debts.

The Trucial Coast has yet to have the oil boom wash its shores. Today many men still make the northern trek from the Batinah coast, and the *nakhodas* there have little difficulty in finding pearling crews. But the happiest Arabs in the Gulf are the 556 sheikhs in the oil areas, for even though their revenue from pearls is at an all-time low, they now get their cut from oil, a much more lucrative and reliable commodity.

1: Bowen
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MK2 Maritime Arabs MK2

[For bibliographical references, see complete text.]

SOME ASPECTS OF THE ARAB DHOW TRADE

Alan Villiers

K 505 439

AT THE end of 1939, there were 106 large ocean-going dhows on the registry of the Persian Gulf port of Kuwait. They averaged about 100 tons, the largest being 300 and the smallest about 75 tons, by European standards. Their average value, at that time, was perhaps 10,000 rupees, the approximate equivalent of $3,000. They made trading voyages with Iraqi dates, loaded in the Basra river, to the coasts of India and East Africa, generally making either two Indian, or one East African, voyage annually. The majority were in the trade to India, with an occasional diversion to East Africa. From India they were accustomed to bring back shipbuilding materials, coir for cordage, and Malabar teak; from East Africa they brought mangrove poles from either the delta of the Rufiji River, in Tanganyika, or from the port of Lamu, in Kenya Colony. These poles were used for building, and the dimensions of the rooms in most of the Kuwait houses depended upon the length of the mangrove poles brought from East Africa.

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In addition to these deep-sea dhows, there were also, at that time, between 100 and 150 pearlers, and some 50 or 60 smaller dhows in the local trade to the Basra river, many of them engaged in bringing fresh water (for Kuwait has no satisfactory supply of its own). New vessels were building at the rate of two or three a month, for deep-sea, and a similar number for coastwise trade.

K MA 336 439

The port of Kuwait was then, and is still, the principal dhow-

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▼ Alan Villiers, deep-sea sailor and author, spent over twelve months in 1938–39 studying firsthand the Arab dhow trade of the Persian Gulf and the coasts of southern Arabia and East Africa. His experiences are described in his *Sons of Sinbad*, published in 1940; Mr. Villiers here presents further information on the social and economic aspects of the trade.

Kuwait MI 1

K MA 396 439 building and trading port of the Persian Gulf, though offering little trade itself. Its only real rival in the deep-sea trade was the ancient port of Sur, near Ras al-Hadd, on the Gulf of Oman. Figures for the port of Sur were unobtainable, but there must have been at least 100 deep-sea dhows sailing from there, the majority to Mogadishu, Mombasa, and Zanzibar. Several ports on the Trucial Coast of Oman also sent their quota of deep-sea ships to Africa and India; and Muscat and Mutrah Bay, and the ports of Lingeh and Qishm, in Iran, contributed a few. But the flag of Iran was a rarity in both Indian and African ports, compared with the Arab.

K MA 396 439 464 In addition to the Persian Gulf and Omani ports, Mukalla in the Hadhramaut, Ma'alla by Aden, Hodeida, Mocha, and Luhaiya in the Yemen, and Qizan on the coast of Asir in the Red Sea, all build and maintain considerable fleets of dhows. These I have seen, personally; there are many ports I was unable to visit. It is probable that the dhow trade round the Arab coasts employs upwards of 2,000 vessels of one sort or another, in which at least thirty or forty thousand men gain some sort of livelihood.

K M.A. 439 505 For many years, steamers of the British India Company have been trading in the Persian Gulf. Kuwait is still well served by steamers from Karachi, and an occasional long-voyage vessel used to put in from New York and London, even before the oil resources began to be exploited in 1940. American, German, Italian, and British lines, none of them likely to overlook any cargoes, all traded to the Gulf. The African East Coast and the Indian coasts are even better served. How is it, then, that a dhow trade of such importance still survives? How is it organized, and how managed?

K MA 488 439 505 One reason — perhaps the chief — why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and

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his vessel pays practically no port dues. His dates can therefore be warehoused in the dhow, until the market can easily absorb them.

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The dhow trade is "native" trade, a stubborn plant which has been growing a long, long time. Nearly all the cargoes carried in dhows are for the native bazaars, and almost never for European account. Much of the cargoes consists of goods which the dhow captain himself, or some merchant or merchants travelling with him, sells for his own profit. The dhow is a peddler, as well as a carrier; a storehouse, as well as a ship; a means of livelihood to travelling merchants, as well as to her crew proper. Basra dates, though the most important outward cargo,[1] are only one source of revenue: there are a host of others, not necessarily always legitimate.

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Kuwaiti owners of date plantations on the nearby Basra river play a considerable part in the financing of deep-sea dhows, though in most cases the captains, called *nakhodas*, are at least the nominal owners. It suits the merchants well that the *nakhodas* should regard themselves as the owners, for this provides them with a cheap form of insurance. If the dhow be lost it is the *nakhoda's* loss, and not the merchant's, for the poor captain must pay back not only the value of the dhow but the advance of freight given him to finance his voyage. Since Islam forbids all forms of ordinary insurance, this arrangement is to the merchant's liking. The *nakhodas* must accept it, for in most cases there is no other way by which they can acquire a big dhow.

In Kuwait, immediately prior to the outbreak of World War II, there was beginning to be some restiveness about this, and an association of the *nakhodas* had the temerity to issue its demands upon the merchants. These included payment of demurrage when unduly delayed at the loading berths in Basra (a dhow might be kept for weeks waiting for her cargo), a sliding scale of freights for different ports instead of the customary flat rate of 1.5 or 2 rupees a package regardless of destination, liability for the return of advances to cease with the loss of the ship, two competent officers for every seagoing dhow, and so forth. The demands represente

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[1] Crew requirements and the very measurements of the dhows themselves are reckoned in terms of dates. A sailor to each 100 packages is the general rule, in Kuwait, and a dhow is spoken of there as having a capacity for 2,000 packages of dates, rather than as being of 100 tons burden.

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2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2--
Kuwait MI 1
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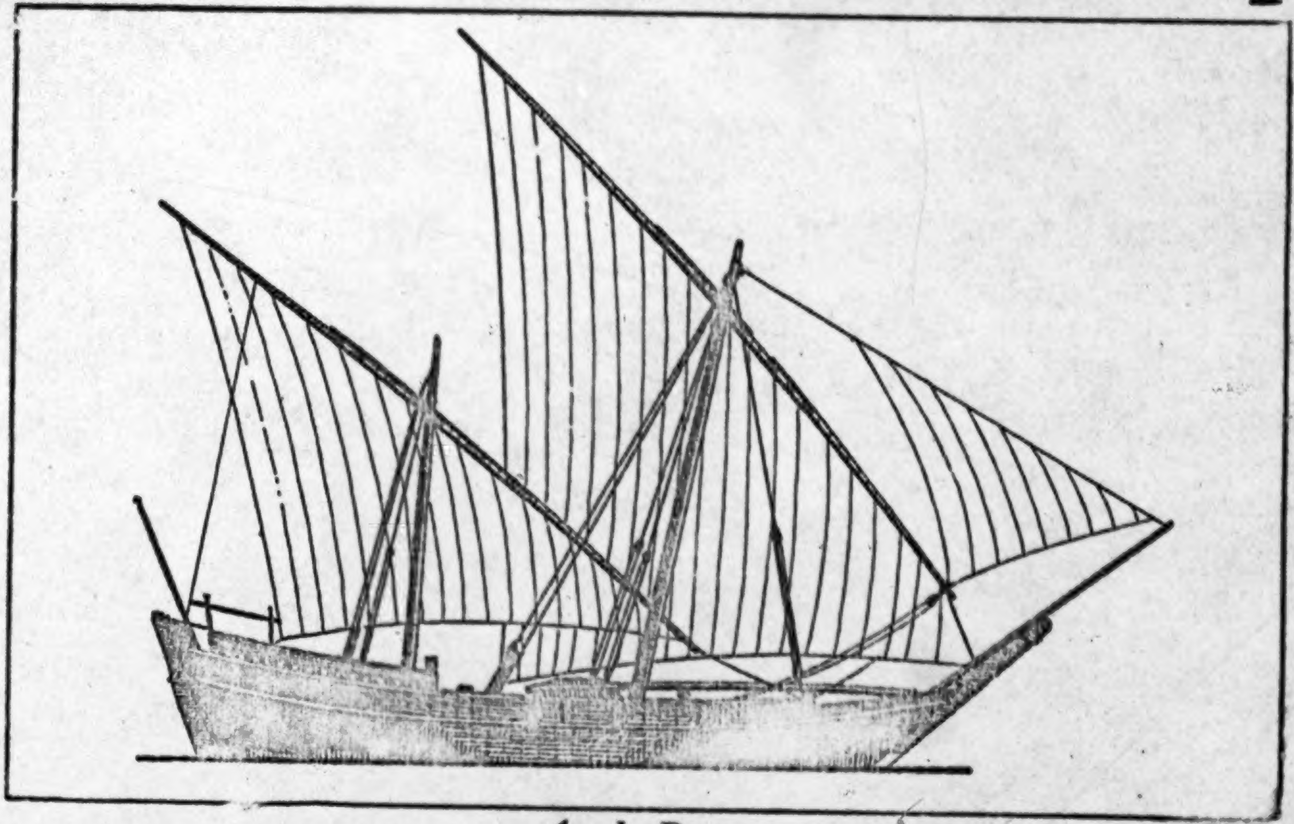
[page 402]



Arab Boom

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MA
456 a bare minimun, surely, and no more than a *nakhoda's* right, but
471 the merchants' answer was that if the *nakhodas* could make new
784 rules, so also could they; and they had the real power. I do not
466 think the attempt of the *nakhodas* got them very far.

MA
While the dates are generally carried both to India and East
443 Africa on a freight basis, nearly all other cargo is bought to the
505 ship's own account and peddled to best advantage. The mer-
439 chants have a substantial share in the dhow's earnings, apart from
the sailor's own ventures, which are limited to what they can stow
in a sea chest on the poop. As far as I was able to discover -- and I
was more than twelve months sailing in deep-sea dhows -- the
freight from the dates, on the typical African voyage, is used to
finance a cargo of salt from Aden and to purchase odds and ends
which might earn a profit in the bazaars of the Benadir coast and
MA Kenya Colony. At the same time, the dhow carries all the passen-
189 gers she can prevail upon to make a voyage, anywhere, for the
189 Arab of Oman, and the Hadhramaut in particular, is an inveter-
ate wanderer, and every dhow is a passenger vessel by the mere
possession of deck enough to lie upon.

The salt is sold in the best market that offers between the Hadhramaut coast and Zanzibar. At the same time, the *nakhoda* does what trading he can in anything which he knows, from past experience, will command a market. The average dhow never leaves the Gulf without at least some carpets, allegedly Persian but generally of either Italian or English origin, which are used both as trade and as bribes. Cooking stones, ghee, live sheep, cows, sacks of rice and flour, dried fish, haberdashery of all sorts, brassware, cheap enamelware, Arab confectionery -- all these may be aboard, either as ship's ventures or as the crew's, generally the latter.

Every man of the crew concentrates on goods which can be bought cheaply in the free port of Aden, adulterated if possible in transit, and sold to the Somali or Swahili shopkeepers whose little stores abound in every port along the coast of East Africa, from Haifun in the north (which the Italians called Dante) to Mikindani in the south, which is about as far south as the Arabs sail in these days. Only Indian dhows go further, to Madagascar and the Comorin Islands. Gaily coloured turbans of the correct style

443 (for the manner of headdress worn in the different parts of Arabia
505 and East Africa varies considerably; what will sell well at
439 Mukalla, for instance, will find no buyers at Kuwait; and the Arab is a stickler for style), sarongs from Java and Japan, amber and artificial beads of the kind the true Moslem loves to fondle, cigarettes in gay packages but of no advertised brand, cheap perfumes (which I have several times seen the sailors laboriously adulterating with water from the ship's tanks), small crocheted caps to go under turbans, money belts, caps of artificial leather and pullovers of extremely artificial wool, veils for the harem, basketware from the Hadhramaut, sometimes a little hashish or *qat*[1] — these are the sailors' ventures, and the profits are their own.

The sailors are inveterate smugglers; almost none of the goods they bring — apart from the main cargo — is declared. Since they leave from small ports along the coast of Arabia where official supervision, while thorough, is not organized to conform with the Europeans' idea of how trade should be conducted, and since so much of their more highly dutiable goods are private ventures, such manifests as they produce to the authorities are useless. The mariner buys his goods himself, and sells them himself (though he does not mind disposing of them to boats alongside). He sees no point in accepting any official interference, and to him the European on the East African coast is still an interloper, recently arrived and wholly unnecessary.

505 The passenger trade is an important one, particularly in the
484 East African voyaging. Though the Italians in their colonies tried
486 to regulate the movement of Arabs, and the growth of Indian influence in Mombasa and Zanzibar has much lessened Arab trade and opportunities, still thousands of Omani and Hadhramaut Arabs travel down the Benadir coast and to Zanzibar annually. Every dhow fit to go to sea — and quite a few which look as if they are not — carries her quota, and some of the overcrowding is incredible. Among 35 Arab dhows which were lying together at Mogadishu, in Italian Somaliland, in the season of 1939, the Italian immigration authorities checked 4,000 passengers. They

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[1] A bush common to southern Arabia, especially the Yemen. The leaves, when chewed, are somewhat intoxicating.

Kuwait MI 1

missed at least another 600, for no list which the dhows supply is really reliable, and each ship carries many persons who are without European documents. As a new dhow arrives, sometimes dozens of her passengers will drop quietly over the side and disperse themselves among the dhows already in the harbour. As with the disposal of the seamen's ventures, all Arabs take a delight, regardless of their ports of origin, in the general defeat of European regulations.

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II

At first glance, the whole deep-sea trade in dhows seems unorganized and almost unregulated. In point of fact, it is very well organized indeed, and has a tradition going back, probably, some thousands of years. There is no association of dhow owners in Arabia as there is a Country Craft Organization on the west coast of India, for the Arab of today is too inherently disunited and fiercely individualist to make this type of co-operation possible. But he can organize his own trade very well, nevertheless. The typical wealthy business family of Kuwait maintains offices, almost always managed by sons of the house who frequently rotate on the circuit, in all the more important centers of Arab coastal trade. The head office is at Kuwait or perhaps Basra, with branches at Aden (in the Crater, not at Steamer Point), Bombay, possibly one other west coast of India port, and Mukalla. Where there is not an actual branch of the family conducting business on a permanent footing, there is either a trusted agent (probably a relative), or one of the younger sons sent in the trading season to watch the family interests. This, for instance, is done at Berbera, in British Somaliland, which, when times are good, can absorb a surprising quantity of Iraqi dates carried there in dhows. The agent or family member is primarily responsible for the collection of debts — always a problem in a trade which is carried on without banking. A family carrying on business on such a scale will have a finger in perhaps a score big dhows, all nominally "owned" by their own *nakhodas*. The cash resources of some of these families must be enormous, and behind them stands the Sheikh of Kuwait, who was a wealthy man even before oil was discovered in his territory.

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MA When a deep-sea dhow is built, at least some of the money is
471 put up by the *nakhoda* himself and his family. It is the first essen-
426 tial of the *nakhoda* that he should be from a family of standing in
565 the community, which will pay its debts. Just why such families cannot finance a dhow by themselves I was unable to discover, but the Arab, apparently, has no objection to carrying on business under a cumbersome structure of debt. The merchant, backed by the Sheikh or the ruling family, backs the *nakhoda's* family, who support in turn a trusted and experienced member to take command of the dhow.

MA It is customary for the boys in such families to go to sea while
565 very young, but they never work as sailors. They are always
871 privileged: no sailor can become a deep-sea *nakhoda*, since obvi-
867 ously if his family is of standing, he would never serve before the mast. The children sail with him sometimes from the age of six or seven, though not regularly. They will make one or two long voyages, looking on and learning but not actually doing anything; then they will remain at home a year or two before going out again. They take command very young. Schooling, at least in 1939, was normally restricted to the local Koranic schools, and rarely occupied more than three months in the year. Only merchants' sons went to the colleges of Iraq, Egypt, and Syria.

MA Gradually the head of a *nakhoda's* family may attain the
565 status of a lesser merchant himself, though his merchandise is
554 generally limited to the wherewithal to build ships, which comes
505 up in his own dhows from the Malabar coast. But a *nakhoda* himself almost never becomes a merchant, and a merchant's son never becomes a *nakhoda*. Nevertheless, the profession of conducting deep-sea dhows about the waters of the Indian Ocean is a highly respected one, and the shipmasters of Kuwait are, on
MA the whole, a very competent and knowledgeable class, though
[487] few of them can practice much astronomical navigation. Even their long voyages down to Zanzibar or to Calicut are coasting, really down with one monsoon, and back with the other, almost always in sight of land. Their real ability consists in their local knowledge, both of ports and trade.

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MA In Kuwait, in 1939 — as now — there were upwards of 10,000
505 qualified deep-sea sailors. An astonishingly high proportion is of
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Kuwait MI1

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Negro origin, the descendants of slaves, though not now slaves MA
themselves. Many others are of Iranian origin. Almost none are 505
Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, 535
the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

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As the *nakhoda* class is tied to the merchant by a structure of 565
debt, so also are the sailors tied to the *nakhoda* class in the same 426
way. All deep-sea sailing is paid for on a shares system, and there 465
are no wages. Often the *nakhoda* of the deep-sea dhow has an in- 328
terest in a pearling vessel (though not now to anything like the 428
same extent as in former years), and the sailor may be bound to him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

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The sailors go to sea because they know no other life, and they 505
make a wretched living by incredibly difficult methods. They 511
have no possessions other than the clothes they stand in, and 342
one or two spare gowns, a good headcloth, and a few sarongs. 291
Their toothbrush is the twig of a tree; their ablutions are made 515
five times daily at a mosque well, or in the sea; they know no 501
shelter and rarely have a bed. The younger seamen, I have no- 565
ticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere.

What keeps the seaman a disciplined and more or less con- MA
tented worker is his hope of reward, principally from smuggling 565
or his own ventures, and his ambition to get hold of a tiny shop 554
in the *suq* of his home town. This is an ambition he rarely 165
achieves. His more usual fate is to die young, especially if he be also a pearl diver.

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2

Kuwait MI1

000 also a pearl diver. Pearling from Kuwait and Bahrein is carried
K on during the season of the hard southwest monsoon in the Indian
MA Ocean, when the big dhows are laid up and there is no ocean
228 sailing. It is therefore possible for the same men to carry on both callings, though in these days the seaman is becoming a little too enlightened to go off cheerfully to the purgatory of pearling.

MA The seaman is also helped by his religion, by his interest in the
565 seafaring life (which has a great appeal of its own) and the fine
581 camaraderie about it, and in many cases by the delights of night
595 life in such ports as Zanzibar and Bombay. If he has no harem of his own back in Kuwait, he is certainly no celibate at Zanzibar. He generally seems to manage a small home in Kuwait after a few voyages, depending upon his own business acumen and the general success of the dhow he serves in. Many *nakhodas* appear to maintain several.

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505 In addition to the merchants, *nakhodas*, and seamen, there is
565 another class of importance in the dhow trade. These are the mates, the experienced officers who, never able to become *nakhodas* themselves because of an unacceptable financial status, very often have more to do with the actual sailing of the dhow than the *nakhoda*. Each big dhow carries at least one such experienced man. Sometimes he is of Iranian origin, and has been sailing since he could walk. Sometimes he is a Negro, member of a trusted ex-slave family, who lives with the *nakhoda* at home or has been
MA brought up in his courtyard.

505 He is always an able mariner, but he is not often trusted to
565 trade. It is not at all uncommon for a *nakhoda*, on the usual East
439 African voyage — which always begins with a long haul and long-winded peddling of dates round the coasts of Southern Arabia, and to Berbera and perhaps Djibouti — to leave the ship for considerable portions of the passage at sea, while he looks after her business interests ashore. For example, in one Kuwait dhow in which I had the good fortune to sail for some eight months, the *nakhoda* cheerfully left the ship at Aden and went on to Mukalla by steamer, to steal a march on the other shipmasters and scoop the cream — he hoped — from the passenger market. Again, he left the ship at Zanzibar, and his mate took her down to the delta of the Rufiji, hauled her out on the beach at Kwale Island south

of Dar es Salaam, loaded her with mangrove poles, and brought 505
her back to Zanzibar again, where the *nakhoda* had ostensibly 565
been trying to assemble passengers and extra cargo for the return 459
to Arabia but in fact had been enjoying a new harem.

Mates are paid by shares, and are, in my opinion, an oppressed 505
class. They carry their own ventures, engage in smuggling on a 566
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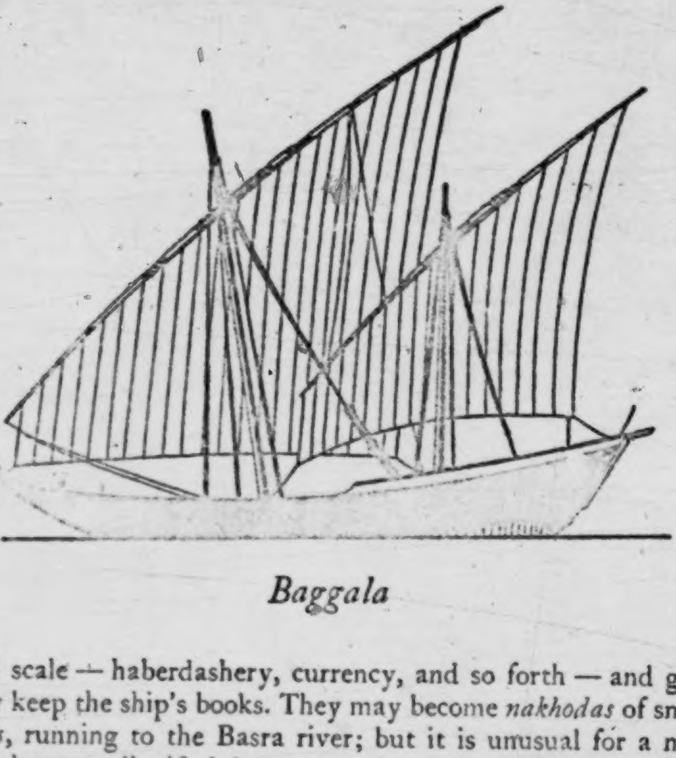

[501]

Baggala

small scale — haberdashery, currency, and so forth — and generally keep the ship's books. They may become *nakhodas* of small *booms*, running to the Basra river; but it is unusual for a man from the more dignified deep-sea trades to descend to this. There is no social status about the *nakhoda* of a coastwise water dhow.

Ships are built by shipwrights who employ no naval architects. 396
Both builders and riggers' lofts are unknown. The ships are put 501
together entirely by eye and take the traditional form either of [771]
the double-ended *boom*, or the carved and embellished *baggala*,
which obviously has a considerable ancestry from the Portuguese
galleon.

Kuwait MI 1

MA 396 501

galleon. *Baggalas*, being both costly to build and unwieldy in a seaway, are now unfashionable. A *boom* is both cheaper and much easier to build, and carries just as much. Her sharp stern makes her safer in a seaway, though it is no part of her builder's plan that her *nakhodas* will try her qualities in a storm. Their sailing, he hopes, will be confined to sunny seas and more or less favorable winds; therefore the clumsy lateen rig will do.

K MA 501 505

The lateen is awkward but cheap; it demands a big crew, but these are cheap, too, for they are the sailmakers and riggers as well as mariners, and their only cost is an agreed share in the ship's earnings. The lateen is a grand pulling sail, and the dhows sail handsomely in their own conditions. There is nothing clumsy about them, though their fish-oiled hulls smell abominably and their underwater bodies are preserved by a mixture of tallow and lime, rubbed on by hand and renewed quarterly. The sailors do this work, as well as handle all the cargoes, keep the passengers in order and extol the merits of their ship so that more passengers might sail with her, tow the ship with her own longboat and propel the smaller dhows by sweeps, in calms, and fight for her if need be. The Kuwait dhows today are never armed, though the Suri may be.

K MA [566]

III

K MA 505 501 439

A brief description of my personal experiences will serve to illustrate a typical East African voyage.[1] I sailed in a Kuwait dhow of the *boom* type, a vessel of 2,000 date-packages capacity — perhaps 150 tons — which had a crew of twenty-eight. She carried something between 120 and 180 passengers, although her hold was full of salt and rice, and her decks were already crowded with a large longboat, a small gig, and a dhow under construction for sale at Lamu.

K MA 439 505

I joined the vessel at Ma'alla, the native port of Aden. She had already been several months at sea, peddling a full cargo of dates from Fao (by the mouth of the Basra river) around the coast of the Hadhramaut, and to Berbera. When I joined her, she had been hauled out on the beach at Ma'alla and her bottom

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K MA 113

[1] The voyage here summarized is described in detail in the author's *Sons of Sinbad* (New York, 1940).

K MA 505 439 [496]

repayed, and already was loaded with her cargo of salt and rice in sacks, and some mysterious parcels on deck for the Sultan of Mukalla. All her crew had their sea chests filled with trade goods from the cheap *suq* in the Crater at Aden; her carpenter was at work on a 40-foot dhow for sale on the voyage; and she had shipped several Suri and Omani merchants, from Aden, bound on a general trading voyage on their own account, wherever the dhow might take them.

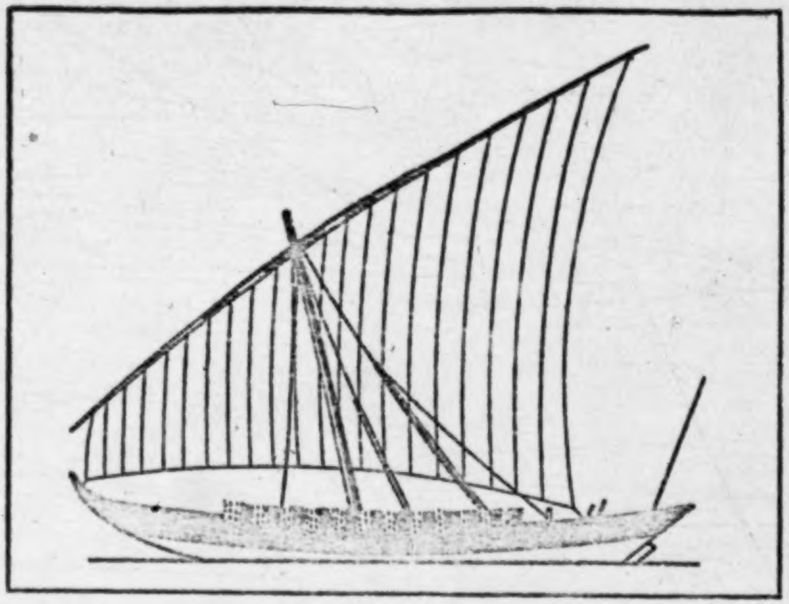
K MA 484 439 505

We sailed first to Mukalla and Shihr, where we embarked passengers (the fare was eight rupees regardless of destination, the passengers providing their own food and looking after themselves entirely) and some further cargo. This consisted mainly of a parcel of condemned dates which it was hoped to sell to the Somali (or failing that, to feed to the Swahili labor in the Rufiji Delta, when loading mangrove poles), some dried shark which smelled high even aboard the dhow, some cooking stones, and a considerable quantity of basketware.

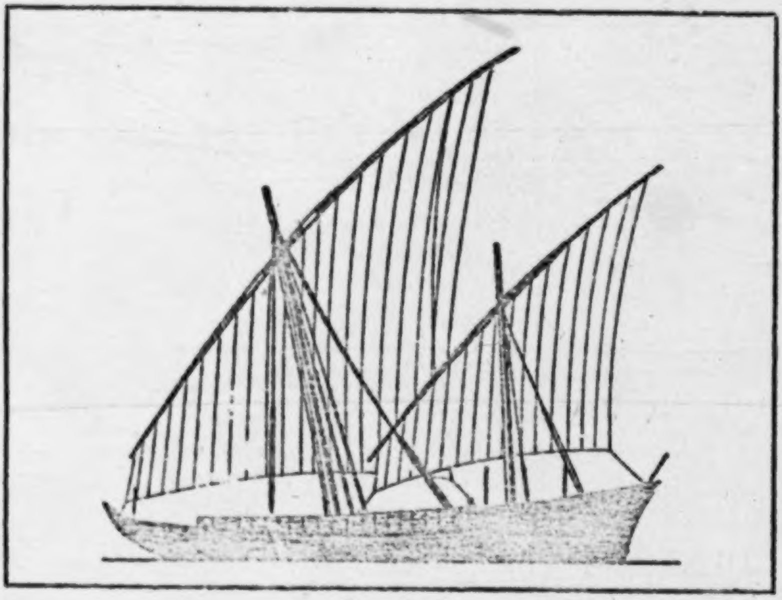
With this lot aboard, and the *nakhoda* pessimistic and depressed at the small number of passengers, though his dhow appeared crowded, we sailed first to Haifun, a salt port on the northeastern coast of Italian Somaliland. There we anchored among a fleet of dhows, and did nothing at all for some time. Finally, some rice was sold, some haberdashery smuggled into boats which the local Somali brought alongside, and lot of fish caught and dried. Then we went on to Mogadishu, running down the coast with the northeast monsoon. At Haifun another Kuwait ship was caught smuggling and heavily fined; and all the Kuwaiti in the harbour contributed to pay the fine. At Mogadishu, it was hoped to land a hundred or so passengers, but the Italians would not permit them to disembark. Trade there was extremely difficult, and little could be done. Some of the merchants left, as far as I could gather, to try to collect debts owing to them from previous voyages. Some smuggling went on (I saw a lovely carpet change hands), some of our passengers melted away and their places were taken by others, equally undocumented.

K MA 501 439 435

After a week or ten days we passed on down the coast to Lamu. Here more passengers landed and there was a determined attempt to sell the new dhow which the carpenter had completed. She



Zaruk



Sambuk

p.412

K MA 501 439 435 was a lovely little vessel which could carry some fifteen tons. The price asked was 1,000 East African shillings, or about $240. At that price, there was no buyer; she finally changed hands at 700 shillings. Lamu was a mangrove-pole port, but I gathered the trade was rather too well regulated for our nakhoda's taste, and we bought nothing.

K MA 439 505 Next came Mombasa, a port with a large dhow trade. Some figures I saw in the Report of the General Manager on the Administration of the Railways and Harbours (Kenya and Uganda) showed that the dhow trade was increasing, rather than diminishing. The latest returns I say, for the year ended December 31, 1937, showed that 1,427 dhows had arrived at Mombasa, an increase of ten percent on the previous year. These 1,427 dhows were computed to register -- if they had been registered -- nearly 40,000 tons. Many were Swahili, from Lamu and Zanzibar, but a large proportion was Arab. There was a native harbor set aside for them, and here we sold salt, landing it in our own longboat. K MA [579] We got rid of our surviving passengers, gave feasts to merchants and officials of the native harbor (these were a great feature of the voyage, and were always accompanied by much monotonous singing and dancing), gathered tidings from brother nakhodas from Kuwait and Sur about trade prospects further south, collected debts, and finally departed toward Zanzibar.

K MA 501 396 439 There were three Indian and one Iranian deep-sea dhows in the port at Mombasa. The Iranian was an enormous vessel of over 400 tons -- the largest dhow I saw anywhere. She was a boom and had been built at Kuwait, but the Kuwaiti sold her because they found such large vessels uneconomic, in bad times, for the mere reason of their two great capacity. They brought too much to sell, when the market was depressed, and they could not wait indenfinitely to dispose of their cargoes because their overhead was too high, despite the fact that everything possible was done to keep down building costs, even to the sending of Kuwaiti shipwrights to the Malabar coast to build big vessels there, rather than carry the timber to Kuwait.

K MA 439 Zanzibar, at that season of the year, was an even busier Arab port than Mombasa. In the first month of the northeast season, over a hundred ocean-going dhows had arrived at Zanzibar, most

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2
Kuwait MI1
Zanzibar FM1

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MA 439 of them Arab. I noticed in the registry office of the Customs building that some were entered as Somali, and a few were registered in the Hadhramaut. No longer did they bring down picturesque cargoes of myrrh and frankincense (if they ever did) or ship out slaves and ivory, ambergris and hippopotamus teeth. They brought salt and dried fish; and when they came, the quantities of hashish and other drugs in the town showed a significant increase. They loaded little at Zanzibar for the homeward voyage, but went on down to the coast of Tanganyika.

We completed the discharge of our outward goods at Zanzibar, and the crew busied itself for weeks selling Hadhramaut basketware and Aden haberdashery — port of origin, Yokohama. When we sailed, leaving our *nakhoda* behind, our only cargo was the parcel of condemned dates, which the Somali would not have. We passed on down to the delta of the Rufiji River, a place given up to mosquitoes, malignant malaria fever, monkeys, sad Swahili, rain, and the best mangrove poles in the world. Here we lay six weeks, while a cargo of some 142 score of poles was laboriously cut and loaded. For this work, Swahili were engaged to help our crew, and at last the bad dates found consumers. The mangrove poles were ferried out in the dhow's longboat, and paid for in silver shillings to a white supervisor. There were some twenty dhows loading in the Rufiji delta at the time, all for the Persian Gulf. MA [164]

It struck me as strange that the dhow should spend so much time embarking a cargo in which the total investment was less than $500, for no matter how I tried to figure things out, I did not see how it could possibly be worth her while to haul such a paltry cargo so long a distance, or how she could make enough from it to show a reasonable profit on the voyage. There was certainly something mysterious about this mangrove pole business, and the white supervisor, energetic as he was, by no means knew all that went o[illegible] I noticed later, when we sold our cargo to King Ibn Saud's agents at Bahrein for use in a new palace at Riyadh, that the Arab receipt was for 295 score, and the price paid, over 4,000 rupees, approximated $1,200.

MA 505 567 z -656 There was some attempt in Zanzibar to regulate the dhow traffic, and precautions were taken to see that there was no slaving, under any guise. A local act requires that evidence be shown

Kuwait MK1
Zanzibar FM1

that any new crew members in Arab ships joined voluntarily; MA
vessels must not be overmanned, and crew and passenger lists 505
must be provided and in order; ships must be surveyed, and kept 567
seaworthy; and *nakhodas* must be certificated. As for the last, the Z
port officials conduct examinations, and the general principle 656
seems to be that if a man is capable enough to bring a dhow down to Zanzibar, certificate or no certificate, he can also be trusted to sail her away again. But the fee for examination is fifteen shillings, and the Arabs complain about it.

We touched at Zanzibar again after loading in the Rufiji, re- K
embarked our *nakhoda* and took aboard a few Swahili school- MA
teachers as passengers (they proposed to hire an automobile at 439
Kuwait to take them to Mecca), filled the decks with coconuts 505
and cases of soap and vermicelli, and departed toward the Persian Gulf again with the first of the broken weather at the end of the northeast season. We did not await the coming of the true southwest monsoons, for it sets in hard; we sailed direct to Muscat, in twenty-six days.

Muscat was depressed and there was no trade there, not even smuggling. All that changed hands, as far as I could see, was a box of Maria Theresa thalers, enormous Austrian coins minted in London for the Omani and available in Zanzibar at a price less than the exchange rate in Muscat. The Arabs turned everything to profit and were prepared to sell anything, even the ship. The K
sailors' pastime in the Rufiji was buying lemons — a thousand M.A
for a shilling — and converting them into sherbet, which they 252
hawked in the *suq* at Kuwait throughout the summer.

Our cargo of mangrove poles sold at Bahrein, the ship returned to Kuwait, to lay up inside a coral breakwater until the new season's Iraqi dates ripened and it was time to go out again. At K
Kuwait, when all her people were returned — several relations of MA
the *nakhoda* had dispersed from Zanzibar back to Lamu and 451
Mogadishu to collect debts — a general balance sheet of the 465
whole round voyage was struck, the profits computed carefully, 439
and divided by a system of shares arranged traditionally. It was 505
not a straightforward statement of income and expenditure; I never saw or heard of any piece of Arab seafaring business which was as simple as that. It was all complicated by prior advances,

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2
Kuwait MI1

K MA 451 465 439 505

debts, odd earnings not shared and even odder earnings which were shared, and mysterious complicated procedures, some of which I never did fathom, for the war came, and stopped my investigations.

The son of the merchant family which owned our dhow, however, told me that her gross profit on the nine-month round voyage was 11,000 rupees, not including the proceeds of the crews' and officers' private ventures. But I think he exaggerated, for the total investment in the dhow was little more than that. But at any rate, the dhow's people were well satisfied and they all, save one, went back to sea with her. The *nakhoda* grew fat throughout the summer, and took a new wife, and a new *boom* for his brother at a cost of 10,500 rupees; and I heard no complaints from the merchants.

K MA [595]

K MA 505 465 501 439

As far as I was able to discover, half the gross earnings went to the ship; this was the merchant's share. The cost of the food for the round voyage (which was not much, for all hands lived very simply and fishing lines were the most important equipment in what passed for her storeroom) was deducted from the other half, and the remainder was then divided by shares arranged strictly in accordance with the accepted value of each man's rating aboard. The sailor's share on the voyage which I made was reported to be 135 rupees (about $40), whereof 35 rupees had been advanced. This was little enough for such a long voyage, and though they worked hard at all sorts of things and were ready for any kind of business, I doubt whether a sailor's earnings from other sources amounted to more than 20 or 30 rupees, clear.

K MA 465 506 181

I heard of dhows from Kuwait that season which were distributing less than 100 rupees; according to the Kuwaiti, who had no high opinion of them, the Suri rarely paid out more than fifty. To a sailor whose only home was the sand of the *suq* and his bed the cloak around him, whose wants were few and whose paradise was assured, even 50 rupees may be a vast sum of money. There was, at any rate, contentment throughout the Arab shipping industry as I knew it, and the quiet philosophy I learned among the simple seamen was of great help to me in the days of the long-drawn war which was soon to follow.

384 MARINE INDUSTRIES OF EASTERN ARABIA

RICHARD LeBARON BOWEN, JR.

361 THE Persian Gulf coast of Saudi Arabia is desolate in the extreme: in
226 many places one travels along the beach for dozens of miles without
seeing a living soul. But there is a sprinkling of old coastal towns,
503 whose inhabitants for the most part gain their livelihood from the sea.
315 Among them are Jubail, long a port of entry for the capital city of Riyadh, 235 miles inland; Dammam, seaport for the Qatif and Safwa oases (a deep-water pier has recently been constructed at Dammam); Al Khobar and Oqair, ports for the great oasis of Hofuf (Hasa). To these have been added of late years Arabian American Oil Company settlements at Ras al Mish'ab (a construction camp and port facilities), Nejma (a refinery and camp), and Ras Tanura (pipeline terminus and cargo wharf).

FISHING

226 Foremost among the marine activities of the older coastal towns is fish-
262 ing. Although there are far fewer species of fish in the Persian Gulf than in the Indian Ocean, they are present in greater numbers, particularly the porgies, than one might expect in so warm a body of salt water, and fish form a welcome addition to the diet in a land where food is pitifully scarce.

226 Fishing methods range from a simple hand line to large and complicated
[857 fishweirs. On land the hand line is used mainly by small boys, who, like
594] the small fry of any other country, enjoy fishing. Since there is an almost complete lack of jetties and piers, these young fishermen have to stand on the beach and heave their weighted lines as far as they can (Fig. 2). When the fish are running, these youngsters line the shores, and their catch is sometimes sizable. Hand lines are indispensable on every dhow and are thrown out as soon as the boat is in open water.

A more advanced type of fishing uses the throw net—a circular net about 16 feet in diameter made of quarter-inch-mesh netting. The periphery is weighted with small lead weights, then doubled back toward the center and tied at 12-inch intervals to form a continuous pocket some six inches deep. The fisherman walks in knee-deep water at low tide, holding his net —which he has folded and gathered with the perfection of a parachutist—

➤ DR. BOWEN is a chemical engineer now resident in Providence, R. I. His field experience in Arabia includes three years with the Arabian American Oil Company (1945 to 1947) and some months as technical and engineering adviser to the Arabian expedition of the American Foundation for the Study of Man (1950).

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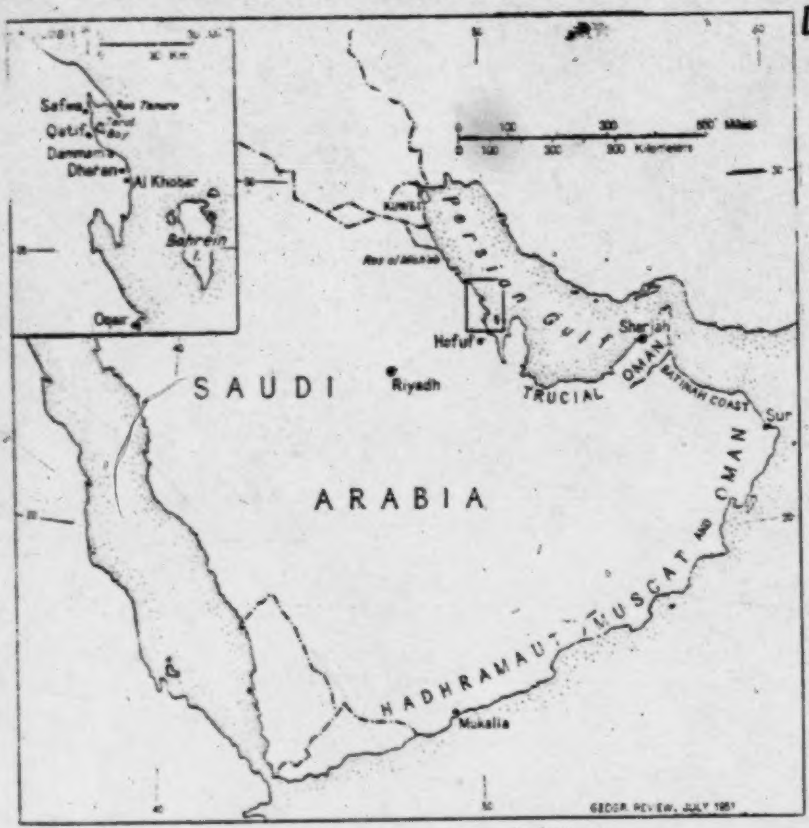
Safwa
Ras Tanura
Qatif
Tarut Bay
Dammam
Dharan
Al Khobar
Bahrein I.
Oqair
Kuwait
Ras al Mishab
Persian Gulf
Hofuf
Riyadh
SAUDI ARABIA
TRUCIAL OMAN
Sharjah
BATINAH COAST
Sur
MUSCAT AND OMAN
HADHRAMAUT
Mukalla
0 100 200 300 Miles
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GEOGR. REVIEW, JULY 1951

FIG. 1—Location map. Inset shows places mentioned in the text.

with both hands and his teeth. Whe[illegible] spots a school of fish, he flings the net into the air with one arm (much like a man sowing seed) and a snap of his head. The net opens out flat and drops on the water; the weights carry the outside to the bottom faster than the center. The fisherman then picks up the net by the center, and any fish under it immediately swim toward the edge and are trapped in the pocket. He keeps pulling the center through one hand and folding it up, and when he has finally gathered in the whole net, he carefully removes the fish flopping around in the pocket, puts them in a palm-leaf basket, and starts all over again. 226

The Arabs also use wire and palm-leaf basket fishtraps (Fig. 4). These are oval-shaped, from two to five feet long, with a cone-shaped entrance on each end through which the fish cannot squeeze out. The traps are usually baited with cuttlefish, forbidden to the Arabs by a strict interpretation of 227 262

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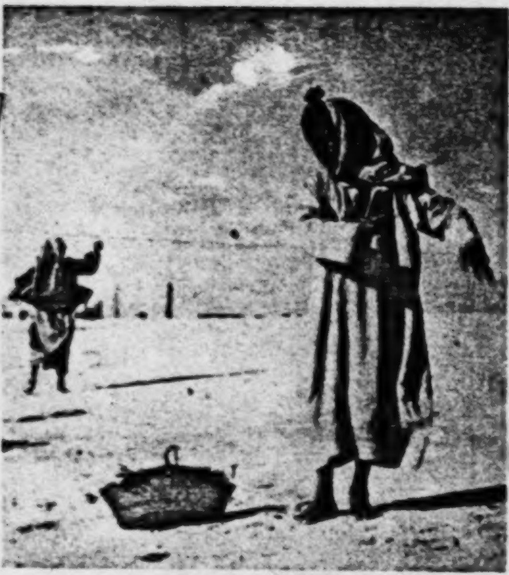

FIG. 2—Arab boys fishing with hand lines. When the fish are running, small boys often line the shore by the dozen.

the Koran, but a particularly juicy delicacy from a fish's point of view. The Arabs dot the shallow water with these basket traps at points where feeding appears good; the edges of small coral reefs are favorite spots.

The Arab fisherman never marks his traps with floats as the American lobster fisherman does, because he fears they will be plundered; he must remember the location of each trap. Where he cannot see the bottom, he suspends a float several feet below low-tide level. To tend his traps, this Arab rows his small boat up and down at low tide until he spies his trap or float and hooks it with a pole; in shallow water he sometimes dives for the trap. I once watched a crew of three fishermen off Ras Tanura; they seemed to know the approximate location of each trap in the 30 feet of water, but they spent as much as a quarter of an hour peering into the water to find each submerged float. These men used the largest wire traps I saw in the Persian Gulf, and their catch at times was astounding.

The Arabs on the east coast of Arabia seldom use seines, though on Bahrein Island I saw several drying in the sun. However, large communal seines have apparently been used on the Batinah Coast of Oman; for Thomas[1] relates that "there, a hundred fishermen were hauling ashore a communally owned net, the vast extent of which was marked by distant bobbing floats . . . In contrast, a lone fisherman, far out, monotonously cast his circular hand-net." On the Hadhramaut coast of South Arabia the fishermen also use large seines. At Mukalla I saw a two-and-a-half-inch-mesh net 190 feet long and 20 feet wide; a narrower net had a mesh of five inches. These wide-mesh nets are used for sharks. Farther east on this coast, at Jazir Bay, the fishermen set their seines by swimming out to sea on inflated sheepskins!

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[1] Bertram Thomas: Alarms and Excursions in Arabia, London, 1931, p. 156.

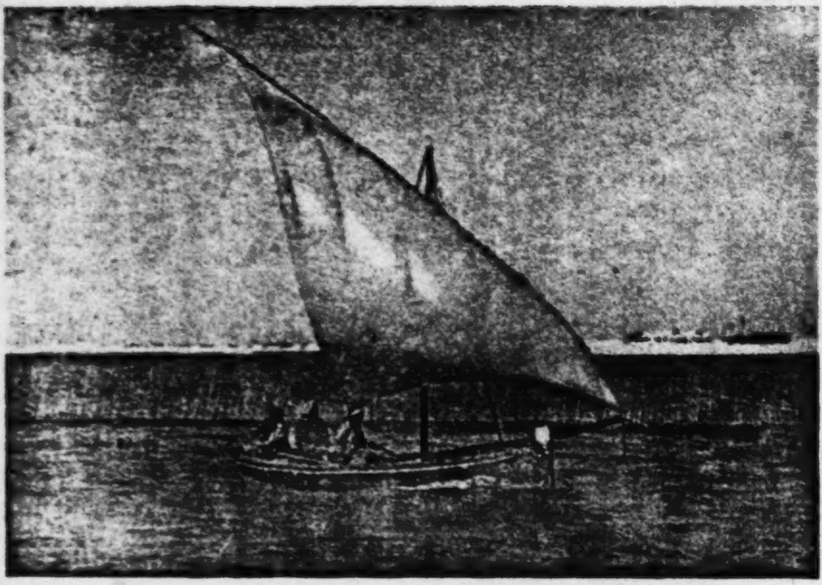

Fig. 3—Arab fishing dhow (*jalbut*) typical of eastern Arabia. The outside wing of a large funnel-type fishweir may be seen directly behind the boat.

Fig. 4—Fishermen tending their basket fishtraps from a *ballam* in 30 feet of water. These traps are marked with floats suspended just below low-tide mark.

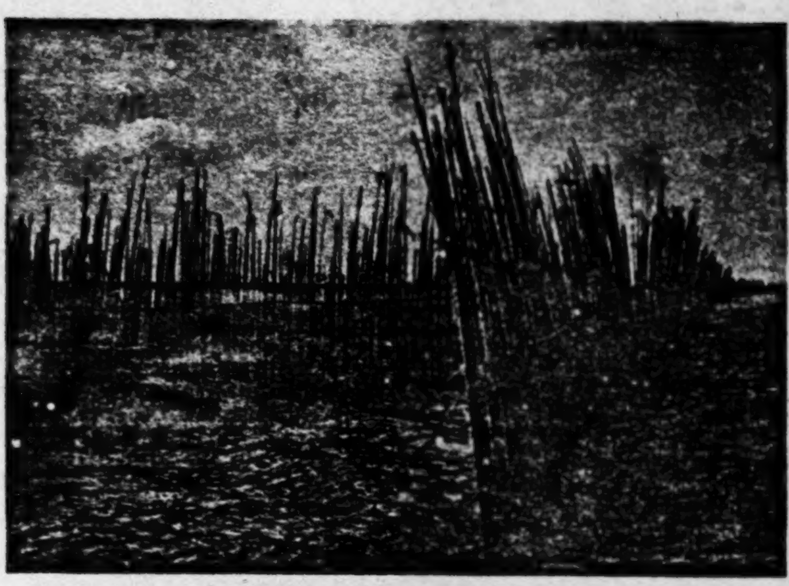

FIG. 5—Outside wing of a funnel-type fishweir showing the inside of the secondary enclosure at the left. The primary enclosure, or "head," of the trap is outside of the photograph.

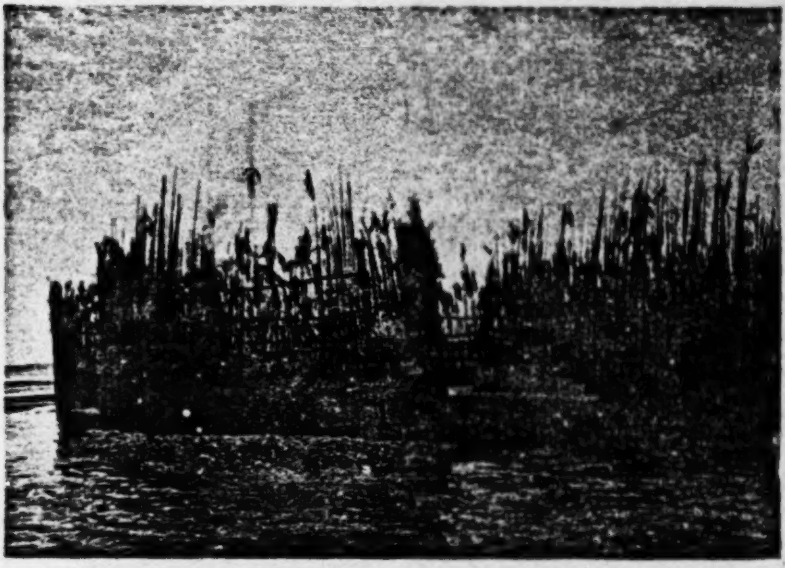

FIG. 6—Entrance to the secondary enclosure of a spear-type fishweir; the "head" is at the extreme left, the leader running to shore at right. The trap is almost completely submerged at high tide.

FISHWEIRS

[285] 226 The largest catch of fish on the Persian Gulf coast of Saudi Arabia and Bahrein Island comes from huge weirs, made from the stems of palm trees. The Arabs build these fencelike traps by driving a steel bar into the mucky bottom and inserting a palm stem into the hole as they withdraw the bar (Fig. 13); the stems are spaced close enough so that no fish can pass through and are tied together. There are two types of weir: a funnel type and a spear type.

[133] In the Persian Gulf the maximum tidal drop is about eight feet. The fishweirs are built so that at low tide there is only a few feet of water on the offshore end of the weir. Where the ebbing tide sets up a definite current, the funnel type (Fig. 7) is used, placed so that the current washes through the trap. The fish carried along in the current are forced through the funnel into the stockade of the weir, the entrance of which is out of water at low tide. These weirs are usually built with the central axis parallel to the shore; however, in Tarut Bay many are not near any shore but are set across tidal currents in shallows. Sometimes several traps are set in a row. It is not exceptional for the ebb current in Tarut Bay to reach three knots in some places.

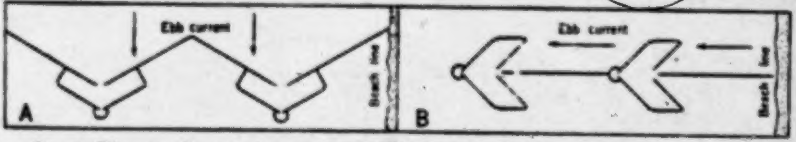

Fig. 7.—Diagrams showing the two types of fishweir. The funnel type (A) catches fish that are washed into the enclosure on an ebbing tide. The spear type (B) is most effective in the case of fish moving parallel to the shore, since the ebbing tide causes only a slight current. Both types are found either singly or in a row, as illustrated.

Where the tidal ebb sets up merely a slight motion, the spear type of weir (Fig. 7) is used; the axis is oriented at right angles to the shore. As with the funnel type, several weirs are sometimes set in a row. Most of the fishweirs on Bahrein Island are of this type. The fish swim inshore on a flooding tide and out on an ebbing tide, and thus tend to work into the weirs; these traps are most effective in catching schools of fish swimming parallel to the shore. This type of weir is less effective than the funnel type, because its action is less positive.

Thus when the tide has gone out, the fisherman has a stockade of fish. He enters this stockade, or "head" of the weir, which is 10 to 15 feet in diameter (Fig. 8), with a net hitched to two 3-foot palm-stem poles. Holding

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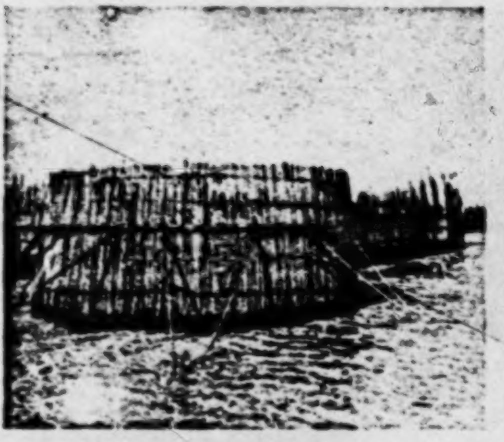

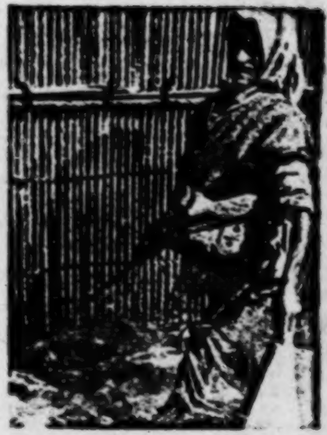

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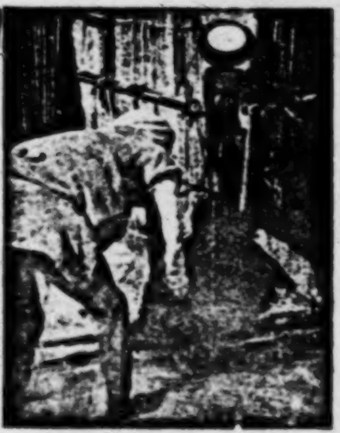

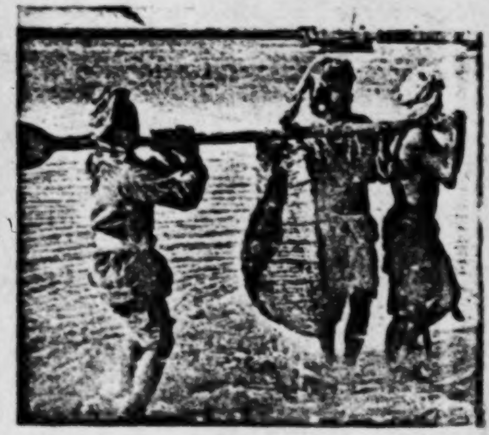

FIG. 8 (upper left)—The stockade, or primary enclosure, of a fishweir, encircled with rope and lashed down to prevent large fish from breaking out.

FIG. 9 (upper right)—Working around the edges of the enclosure with a fine-mesh hand net. Note the long burlap shirt, frequently worn by fishermen in colder weather.

FIG. 10 (lower left)—Transferring the fish from the hand net into a palm-leaf basket. Note the narrow entrance into the primary enclosure formed by the wings of the secondary enclosure; this entrance becomes narrower toward the bottom.

FIG. 11 (lower right)—Carrying the basket of fish ashore, slung from an oar. Fishweirs in the background.

226 one in each hand (Fig. 9), he works the net around the edge of the stockade and empties the fish into palm-leaf baskets (Figs. 10 and 11). Most of the fish weigh less than a pound, but it is not unusual for a weir to yield many hundreds of pounds of fish in a tide change, though sometimes only enough are caught to feed the fishermen. The fish are usually sorted into two or three grades and are often sold on the spot. Several times I saw sharks as large as six feet trapped in the stockade; extracting these monsters was a delicate task. Most of the cuttlefish used as bait in the basket fishtraps come from these palm-stem fishweirs.

There seems to be a direct correlation between the amount of fish caught in a weir and the wind velocity, at least on the Ras Tanura peninsula. The Arabs can estimate their catch simply from the atmospheric conditions prevailing before low tide: if the *shamal*, the strong north wind, has been blowing, the haul is sure to be good.

I never saw the effect of the wind fail. In the fall jumbo shrimp, equal to any found in the Gulf of Mexico, are caught in these weirs. If there had been little wind, the catch would be small, but if the wind had been considerable, there were sure to be several dozen nice shrimp. The 10 weirs on the Tarut Bay side of Ras Tanura yielded at the most only several dozen shrimp, most of which came from two funnel weirs; the shrimp that appeared in local markets in large quantities came from the weirs on the flats [251] around Qatif. The shrimp in Arabian markets is sun-dried, so that it can be stored and sold in any season.

As a rule, the men who work a fishweir get half the profits, and the owner gets the other half. The profits are figured by deducting from the gross return the cost of the workers' food and of the material required to maintain the weir. If a trap fails to produce, the owner sometimes supplies the tenders with cash, which must be repaid later.

In summer the daylight low tide in the Persian Gulf at Ras Tanura is about two feet higher than the minimum, in February. The water does not get low enough in the weirs to trap fish effectively, and the summer catch [228 is therefore poor. Usually trap tenders are assigned to pearl diving and rock 464] mining, possible only in the warmer months; one man is left to collect the small catch and keep the weir in condition. When Ramadan, the great Moslem fast month, falls in summer, the Arabs on Tarut Bay allow their fishweirs to fall into disrepair. It is surprising how fast a weir will disintegrate under even the slight wave action in a sheltered area such as Tarut Bay. In 1945 there were several strong shamals during Ramadan (then the last two weeks in July and the first two in August), which, coupled with the

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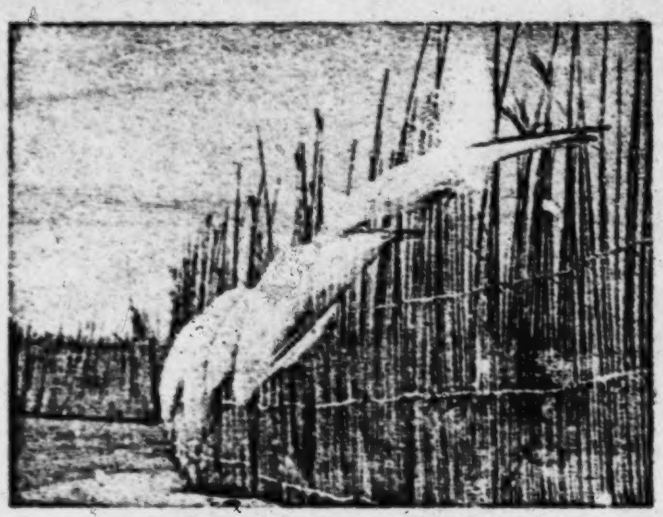

FIG. 12—Hand nets drying on the inside wing of a funnel-type weir.

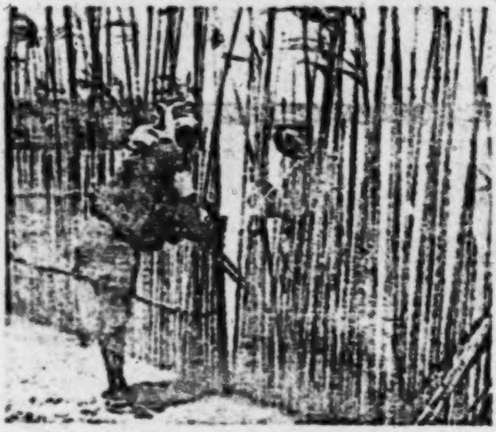

FIG. 13—Mending the weir. Arab in foreground is making a hole with a steel bar, into which a palm stem will be inserted by the other Arab.

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut
Bay side of the Ras Tanura peninsula. All during the fishing season constant
maintenance is necessary (Fig. 13).

226 Because of its shoal water, Tarut Bay is the only place along the Persian
Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
suits against the Arabian American Oil Company, asserting that the change
691 in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
424 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir
[435] rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras Tanura area the sale was an economic blow, for much of the fish supplied to Hasa Province came from the Ras Tanura traps.

ROCK MINING

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[2] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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113 [2] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen,
501 Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shewes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

228 his great toe completely severed by a large piece of faroush that had slipped and hit his foot as he stood on the sea bottom.

Hasa, known to Americans familiar with native construction in Arabia as "sea rock," is found on the sea bottom in more or less solid deposits, from which a diver pries pieces (Fig. 15). Faroush is much more difficult to mine: it takes at least a day to get a boatload, whereas a crew may get three or four boatloads of hasa a day. Faroush is sold by the square measure, hasa by the cubic measure.

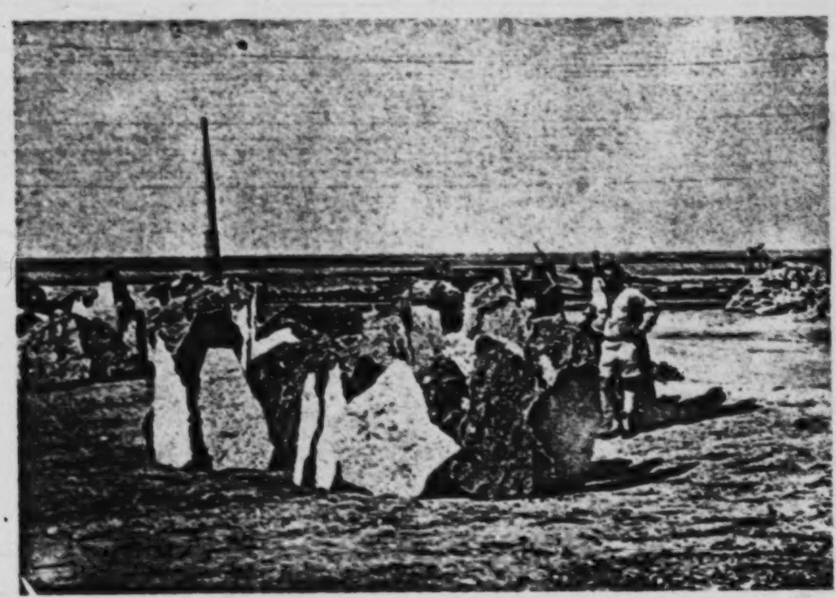

FIG. 14—Author standing by slabs of *faroush* on the shore of Bahrein Island. Faroush is mined near Bahrein in much larger pieces than in Arabian waters. Pile of *hasa* in right background.

228 The rock divers, like the pearl divers, work only in the warmer months.
464 Since they generally work in water that is shallower than the pearl waters and therefore remains warm longer, the mining season is two or three months
461 longer than the pearling season, which is only four months. The rock divers do not work constantly, hour after hour, day in and day out, as the pearl
[339 divers do, since each boatload has to be sailed to shore. A small stock pile
317 of faroush and hasa is always maintained in every seaboard town, and most of its buildings are constructed from these two rocks. Lime is made by burning hasa.

426 The crews mining coral rock work on the "debt system," notoriously
465 exploited in the Persian Gulf pearling industry. Although they are paid good

wages, they are given cash advances and food during the winter and during 426
slack periods. They never seem able to pay off their debts to the dhow 465
owners.

PEARLING

The most colorful marine industry of the Persian Gulf is pearling.[3] 228
Pearling is definitely a seasonal occupation, confined to the months when 132

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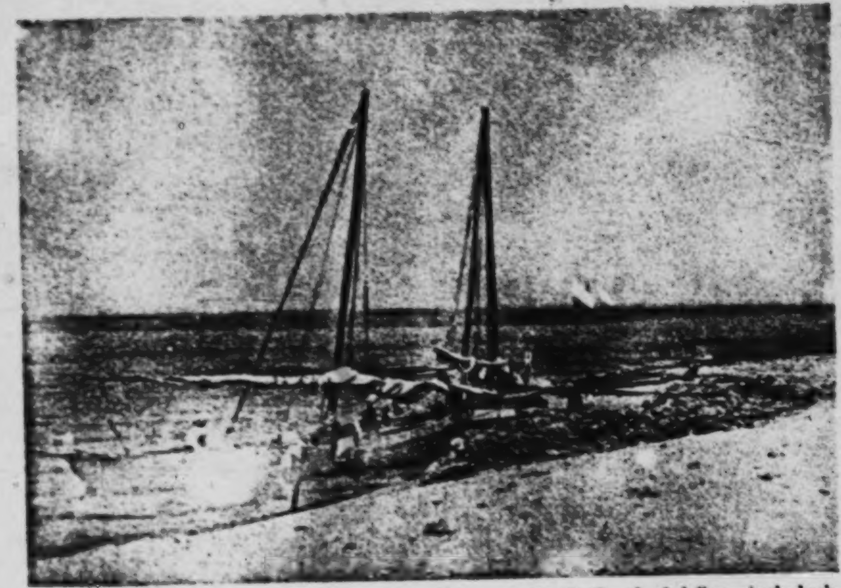

Fig. 15—Unloading hasa from jalbuts on the Ras Tanura peninsula. Two loaded dhows in the background are bringing in more.

the water is warm. On the Persian Gulf coast of Arabia the minimum winter air temperature is in the middle forties, the shallow-sea temperature in the low sixties. From long experience the Arabs have found that they can begin deepwater diving in June and continue until the first week in October. At the start and finish of the season the surface-water temperature is about 85°, but the deep-water temperature is considerably less; the maximum surface-water temperature may exceed 100° in August. Before this main season the *ghaus al-kabir* (great diving), there is a season of about two months, known as the *ghaus al-barid* (cold diving), when smaller boats work the shallower waters near their home ports; during the winter many men go out as "waders" at low tide to pick up what they can just below tide level.

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[3] See also R. LeB. Bowen, Jr.: The Pearl Fisheries of the Persian Gulf, *Middle East Journ.*, Vol. 5, 1951, pp. 161–180.

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Fig. 26—Emir Nasir of Darin with a season's crop of pearls from his pearling jalbuts.

Pearl oysters are found from low-tide level to 20 fathoms. There are pearl beds off the whole Arabian coast from Bahrein to Ras al Mish'ab, but the best banks are north and east of Bahrein Island, and the best beds between 5 and 10 fathoms. The beds are not charted; indeed, this would be useless, since they shift periodically. A bank may be sterile for several years and then suddenly produce the finest pearls of the season. The Arabs believe that the best pearls—the largest and whitest—come from deep water, though some of the more pessimistic say that the Persian Gulf never yields more than two first-class necklaces in any one season.

527 The pearling boats leave Bahrein, Kuweit, and the Trucial Coast of
502 Oman for the main season en masse to drum beating and chants, but the few dhows from the Saudi Arabian ports slip out unceremoniously. The Bahrein fleet works up, the Kuweit fleet works down, and the small Saudi Arabian fleet works in the middle.

The *nakhoda* (captain) of a pearling dhow orients his craft at the edge of a bed so that when the anchor line is paid out, the dhow will drift across the bed. When the divers start to get only a few oysters, the dhow is allowed to drift a little. When it is completely across the bed, the crew moves it back to a fresh location with the sweeps, to the accompaniment of drum beating and chants. It is here that the nakhoda shows his real skill and knowledge, for he must keep his craft in virgin water.

223 Pearl diving in the Persian Gulf is essentially "skin diving." The diver
292 wears only a loincloth and leather fingers to protect his fingers from sharp coral and shells; a horn noseclip and cotton or beeswax to stuff into his ears complete the "equipment." The use of drags, dredges, or compressed-air diving suits has been prohibited by the British, long the protectors of the Persian Gulf, and only the inhabitants of the Gulf—Arabs and Persians—can work the pearl fisheries.

228 Each diver has two lines, one attached [illegible] a stone or iron diving weight; so that they will not become fouled, they are passed over sweeps left projecting over the gunwales athwartship and lashed down to the tholepins. The diver puts his feet into a loop over the diving weight (or simply lets the rope pass between his toes), releases the rope by untying a slipknot, and, holding the rope tightly, plummets to the bottom. As soon as he releases the line with the weight attached, the attendant hauls it to the surface. In the meantime the diver frantically plucks all the oysters he can before exhausting his air. He usually crawls on one hand and one foot, propelling himself with his free foot and collecting the oysters with his free hand. He puts the oysters into an open-weave palm-leaf basket fastened to his waist or around his neck, or hitched to a rope (which he holds or which is tied to his body). When he is ready to come to the surface, he jerks this rope.

The maximum depth at which the divers work is about 12 fathoms (72 feet). The average length of time they remain under water has been greatly exaggerated: some stories say 5 to 10 minutes. Villiers,[4] who spent two months on a buyer's *jalbut* with the Kuweit fleet, states that the divers stayed under water from 40 to 90 seconds, averaging about a minute. O'Shea[5] spent some time with the divers of the Trucial Coast, and he also states that the time averaged about a minute, ranging from 40 to 75 seconds. Hugh Smith[6] observes that the Arabs are the best divers employed in the Ceylon fisheries, staying down from 60 to 90 seconds; he cites an authentic case of an Arab who stayed down 109 seconds in 7 fathoms of water.

228 461 Ordinarily the diver remains under water for about a minute and rests for two or three minutes; on a good day he may make 30 or 40 dives, totaling half to three-quarters of an hour, and by the end of the season he may have completed more than 3000 dives in 30 to 50 feet of water.

228 461 165 136 The diver's worst enemy is fatigue. He has little fear of sharks and, indeed, is seldom bothered by them, though O'Shea[7] speaks of an attack on 30 divers, two of whom were killed under water. Whitelock[8] states that the greatest fear of divers on the Trucial Coast is the sawfish, which has been known to cut divers in two. The creature most feared by the divers in the Persian Gulf, at least on the north banks between Kuweit and Bahrein, is a jellyfish known to the Arabs as the *dawl*, which has two- to three-foot stinging tentacles that can easily put out an eye

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113 [4] Alan Villiers: Sons of Sinbad, New York, 1940, p. 392.

[5] Raymond O'Shea: The Sand Kings of Oman, London, 1947, p. 137.

[6] H. M. Smith: The Pearl Fisheries of Ceylon, *Natl. Geogr. Mag.*, Vol. 23, 1912, pp. 173–194; reference on p. 182.

[7] *Op. cit.*, p. 138.

[8] H. H. Whitelock: An Account of the Arabs of the Pirate Coast, *Trans. Bombay Geogr. Soc.*, Vol. 1, 1844, pp. 32–49; reference on p. 43.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 312 502 438 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 442 439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they

all end up in Bombay

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

228 all end up in Bombay. The Indians drill, polish, and grade the pearls, and
442 string them on silk; these short strands are known as "Bombay bunches."
439 Before World War II the pearls were sent to India by streamer; today they
509 are usually sent by air from Bahrein, Kuweit, Sharjah, and Dharan. The pearls are usually sold to Indian merchants in these towns, but occasionally the Arabs themselves take the pearls to Bombay.

After all the pearls have been sold, the nakhoda figures out the season's
228 profit. The owner of the dhows gets half the profit; the other half is divided
465 among the crew. Most of the pearling dhows out of Saudi Arabian ports are small (not more than 40 feet), with crews of ten -- six divers and four attendants -- in addition to the nakhoda. Each diver and each attendant gets one share in the profits (about 4 per cent); the nakhoda gets two shares, unless he owns the dhow and longboat, in which case, of course, he gets more than half the profit. The number of shares each of the crew, the nakhoda, and the owner get is agreed on at the beginning of the season and may vary from place to place. Many of the pearling dhows out of Kuweit and Bahrein are considerably larger than those out of the Saudi Arabian ports and may have crews of forty or more; on these the nakhoda gets a larger number of shares.

Pearling is a gamble for everyone concerned, from the merchants to the divers. Some seasons are good, some bad; sometimes a boat has bad luck, sometimes excellent luck. A share on a pearling dhow should be worth several hundred rupees, but it may not be worth fifty.

Usually a share on a pearling dhow represents a year's wages, since the
228 pearling industry operates under the "debt system" mentioned above (not
426 to be confused with the "truck system" of pearl fisheries elsewhere, in which the divers are paid off in produce). Under the debt system the divers and attendants are given cash advances during the winter season, when they are not working, and their families are given food and supplies while the season is on. The advances are deducted from their calculated shares, so that usually the worker gets little or nothing.

Thus the divers and attendants are perpetually in debt. Once a worker is in debt to a nakhoda, he cannot work for anyone else during the pearling season; this is one of the laws of the industry. He has virtually sold himself into economic slavery to the nakhoda, who has his services and never actually has to pay him anything, whereas he in effect pays the nakhoda in the pearls he produces. However, it should be remembered that the nakhoda is in turn usually in debt to some merchant, who commonly finances numerous nakhodas.

228 On Bahrein and in Kuweit the governments have made reforms in the
656 pearling industry. On Bahrein a pearl diver's debts now die with him; in
672 other places a diver's debts are passed on to his son or brother. The Bahrein
426 government also demands that account books be kept for each diver, and
the cash advances are agreed upon at the beginning of the season.

228 However, there has been a drastic change in the Persian Gulf pearling industry. The great depression after World War I and the competition from Japanese cultured pearls dealt the pearl fisheries a serious blow. Twenty-five years ago there were nearly three thousand dhows engaged in pearling in the Persian Gulf; today there are not more than six hundred. In the twenties the east-coast ports of Saudi Arabia probably sent several hundred boats to the pearl fisheries annually; today there are not more than several dozen. In the twenties the value of the Persian Gulf pearl fisheries was more than a million dollars; today it is less than a quarter of a million.

228 Thousands of divers and attendants were thrown out of work. In Kuweit
numerous pearlers found employment on sailing ships traveling to India
464 and Africa. On Bahrein Island many were absorbed by the rapidly expanding oil industry. In Saudi Arabia oil development came late, and the unemployed pearlers had already been absorbed as fishermen, rock miners, and farmers; in fact, so well adjusted were the Saudi Arabian towns that when the Arabian American Oil Company needed large amounts of labor in 1945, it had to hire Bedouins from the desert. Oil came late to Kuweit also; however, here workers were drawn from the marine industries, since the Kuweit Oil Company paid higher wages than the workers could get as sailors, pearlers, or fishermen.

Oil has thus been able to offer salvation to the lowly coastal worker of the Persian Gulf. A man in debt can now get a job with an oil company and pay off his debt. So effective has this proved that the Kuweit, Bahrein, and Saudi Arabian nakhodas have difficulty in getting men to send to the pearl fisheries, or to man the sailing ships going to India and Africa. However, oil has yet to come to Oman, so that pearlers still leave the Trucial Coast in large numbers, and many Oman dhows from Sur still sail down to Africa.

4: Bowen C-5 (1950) 1951 MK2 Maritime Arabs MK2

The Dhow Sailor[1]

BY RICHARD LeBARON BOWEN, JR.

I

487 SINCE time immemorial, cargo has been transported in sailing ships up and down the South Arabian and the East African coasts. As the medieval Sinbads and the ancients before them had done for countless centuries, so are the Arabs, Indians, and Persians today transporting cargo in sailing ships up and down these same shores. Today these sailors operate the last great fleet of deepwater sailing ships in the world, and because of the special circumstances, this fleet will probably sail on for many more centuries oblivious to the changing pace of life around it. Life for these modern sailors has changed little in the thousand years that have passed since the adventures of Sinbad the Sailor were recorded in *The Thousand and One Nights*.

502 132 The Arabs, Indians, and Persians are still able to sail their fleets of

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114 [1] Credit for this article belongs in large part to Mr. Frederick Hunt, who, after reading the author's 'Arab Dhows of Eastern Arabia' in THE AMERICAN NEPTUNE, wrote to the Editor and asked if a follow-up might be possible, 'telling something of actual life aboard a dhow, how the crew lives, watches they stand, living conditions, what they eat, their wages, etc.' Mr. Hunt's outline has been followed almost to the letter, with some additional material added to round out the study.

Shortly after the first draft of the article was finished, the writer was very fortunate to become a member of the American Foundation for the Study of Man Arabian Expedition, which conducted archaeological investigations in South Arabia during the winter of 1950. Almost a month spent at Aden and on the south coast of Arabia, enabled the writer to collect much valuable additional first-hand data on the life of the dhow sailor. The writer is indebted to Mr. Wendell Phillips, leader of the expedition, for his assistance in making this particular phase of the study possible. The writer is deeply grateful to Prof. W. F. Albright, vice-president of the American Foundation for the Study of Man, for his guidance and assistance in numerous details in the work. The writer is also indebted to Dr. Philip K. Hitti for valuable advice on certain points.

In doing any work on the subject of dhows, one must consult what Alan Villiers has written on the subject. By sailing with the Arabs on their dhows for almost a full year Mr. Villiers has obtained an intimate picture of the dhow that the casual observer will completely miss, or the serious worker may not be able to get, as the Arabs are rather suspicious of Europeans who investigate their activities too closely. The writer of this present article has drawn on Villiers' material to round out certain aspects of this article and to supply various facts and figures for which Villiers alone is the source. Most of such material has been taken from his entertaining book, *Sons of Sinbad* (New York: Charles Scribner's Sons, 1940), which in further reference will be abbreviated to A. Villiers, *SS*. 113

A description of the various types of dhows mentioned by their Arabic names in this article will be found in R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 87-132, and R. LeB. Bowen, Jr., *Arab Dhows of Eastern Arabia* (Rehoboth: Privately printed, 1949).

530 lateen-rigged dhows, which operate in the main without the aid of engines, 132 partly because of the amazing predictability of the monsoon trade winds. For millenniums the northeast monsoon has started unfailingly about October and blown for six months, until the southwest monsoon set in about April and continued for the next six months. By a strange coincidence, these winds blow virtually parallel to the South Arabian and East African coasts. The Arabs ride their lateeners down from the north on one wind and return on the other. So convenient is the arrangement that it is probably one reason why the fair-weather lateen rig has persisted for so many centuries on the deepwater dhows in the waters of the Indian Ocean.

487 The *Periplus of the Erythraean Sea* (written by an anonymous Egyptian-Greek sailor in A.D. 50) tells us that the secret of the periodicity of the monsoons was discovered by Hippalus somewhat earlier and that 'from that time to the present day' ships bound for India from the Red Sea or South Arabia set a course 'straight out to sea.' It should be noted that Hippalus' find was a 'discovery' only from the Egyptian and the Greek point of view, as he discovered a secret that Indian and Arab mariners may have been carefully attempting to hide from Egyptian and Greek sailors. The original discovery of the fact that one could 'sail straight out to sea' and reach India from South Arabia, rather than by coasting, was more of a geographical than a meteorological discovery, for it was a realization of the southern projection of India (see Figure 1). Certainly no sailor in a sane mind would set a course 'straight out to sea' from South Arabia if he thought that the lands around the Erythraean Sea were oriented as shown in Figure 2.

The South Arabian kingdoms long maintained a monopoly of carrying the goods of the East via camel to the West. The Arabians collected the products of India and East Africa at the southern terminal of the famous incense route and sent these north, along with their own products, in huge camel caravans; the recipients in the north thought that all the products they received originated in South Arabia. Many writers have stated that the South Arabian kingdoms were doomed when the West discovered the secret of the periodicity of the monsoons. However, this writer feels that the monsoons had little to do with it; more important was the discovery that many of the coveted products thought to be indigenous to South Arabia actually originated in East Africa and India. After this fact was discovered, Greek and Roman shipping entered the Indian Ocean; in opening up trade with India and Africa they immediately started to slash the revenue of the South Arabians. It should be

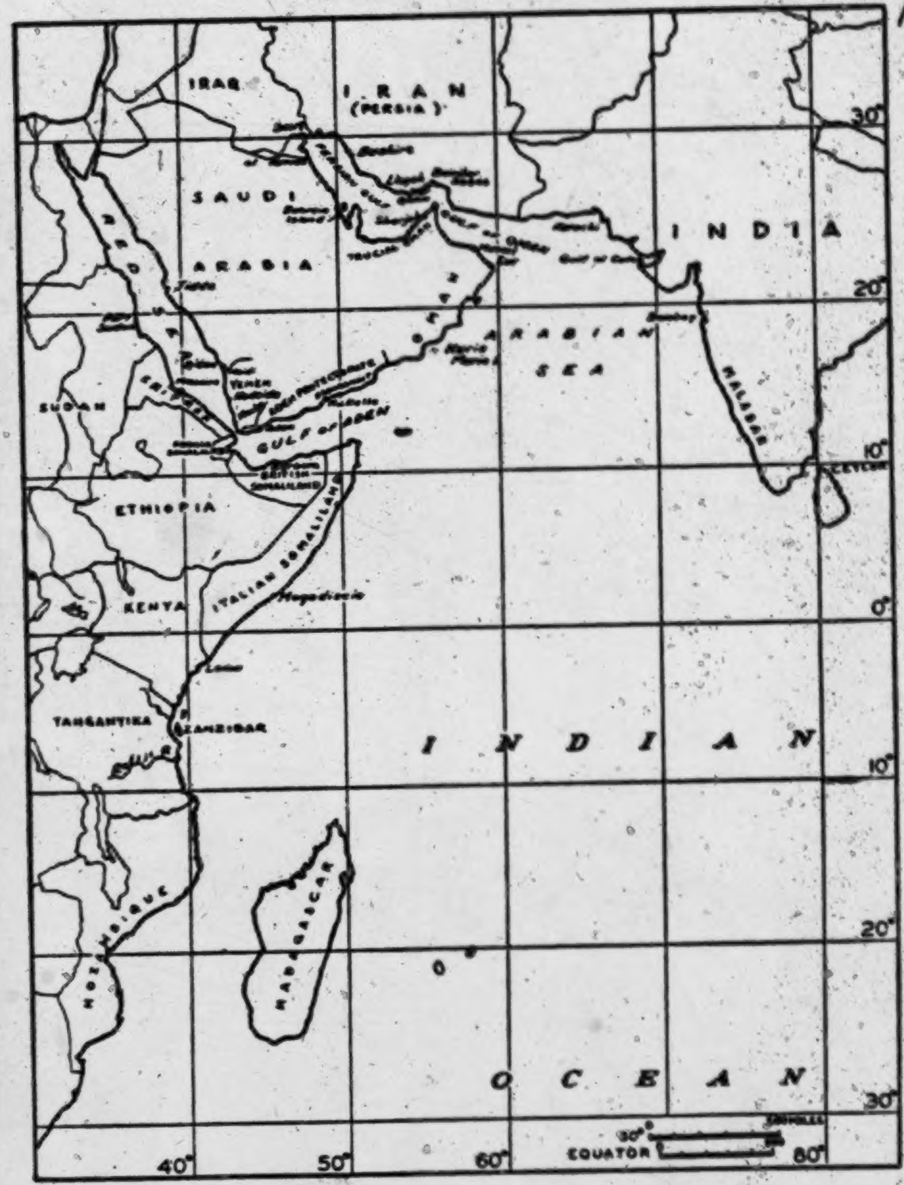
IRAQ
I R A N
(PERSIA)
SAUDI
ARABIA
RED SEA
INDIA
ARABIAN SEA
Gulf of Cutch
Bombay
MALABAR
CEYLON
SUDAN
ERITREA
YEMEN
GULF of ADEN
BRITISH SOMALILAND
ETHIOPIA
ITALIAN SOMALILAND
Mogadiscio
KENYA
Lamu
TANGANYIKA
ZANZIBAR
I N D I A N
O C E A N
MADAGASCAR
MOZAMBIQUE
Kuria Muria
30°
20°
10°
0°
10°
20°
30°
40°
50°
60°
80°
EQUATOR

Fig. 1. Map showing the area discussed in the text. Persian Gulf dhows still coast to Zanzibar on the northeast monsoon and return on the southwest monsoon

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487 noted that Western shipping could have successfully accomplished the same end by simply coasting, even if the direct southern route to India had never been discovered.

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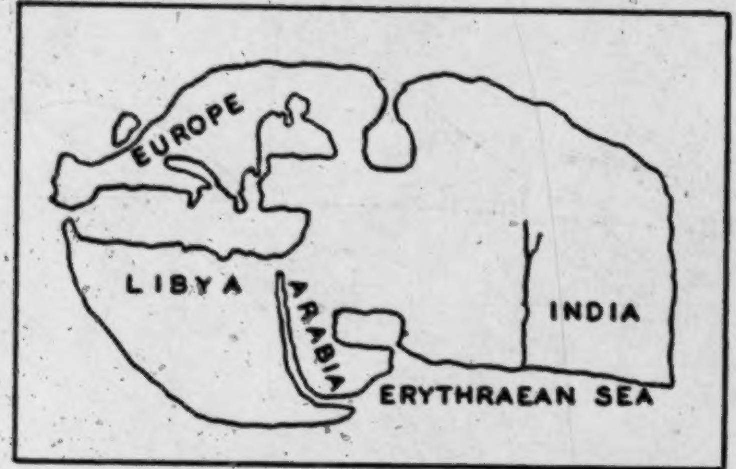

Fig. 2. The East as the ancient Greeks and Romans visualized it in the first century B.C. The map is constructed from distances and directions presented by the ancient geographers

It should also be emphasized that for the people inhabiting the coasts there was never any 'discovery' of the fact that the monsoon trade winds blew in one direction along the South Arabian and East African coasts for six months and then blew in the opposite direction for another six months; the people up and down these coasts knew it as a fact. Thus it was probably known to the Babylonians and Egyptians that the winds along the coasts in the Indian Ocean were subject to seasonal reversals. The Babylonians had organized sea trade as early as the twenty-third century B.C.

However, the fact that a ship could sail between India and Arabia directly, by a route shorter than the coasting route, had to be discovered. Whether it was the Indians or the Arabs who discovered this is not known; while we have a lack of reference to ancient Arabian shipping, there is considerable material referring to Indian shipping before the Christian era. A Buddhist record attributed to the fifth century B.C. relates that the sailors then used 'shore-finding birds' to find land.[2] They released the bird and, if it could not spot land, it returned to the boat;

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[2] T. W. R. Davids, *Journal Royal Asiatic Society* (1899), p. 432.

however, if it sighted land, it headed straight for it, showing the sailors the direction of the nearest land. Certainly this would seem to indicate voyages of more daring than mere coasting voyages. There are numerous Sanskrit and Pali references to Indian trading voyages dating from about the third century B.C., and there is one Sanskrit manuscript containing a treatise on shipbuilding in ancient India, giving the sizes (ranging up to 260 feet in length) of dozens of types of ships.[3] 487

Zanzibar is the unofficial southern port for the lateen fleet sailing down 103
from the north, although the Indians sometimes go on to Madagascar. 487
Soon after the northeast monsoon has set in, lateen craft start to come into Zanzibar. Arabs come from the Persian Gulf ports of Basra, Kuwait, Bahrein, and Sharjah on the Trucial Coast of Oman; Persians send ships from the Persian Gulf ports of Bushire, Lingeh, Qishm, and Bandar Abbas. Arabs of the Oman ports of Sur and Muscat on the Gulf of Oman and Indians from the Gulf of Cutch and the Malabar coast all send dhows down to Africa. Arab craft also sail down from Aden and Mukalla in the Hadhramaut, while the Red Sea contributes its craft from Port Sudan, Massawa, and Hodeida. Even the Somali coast contributes to the fleet arriving at Zanzibar, with dhows coming down from Djibouti, Berbera, and Mogadiscio.

Kuwait is the largest maritime and dhow-building port in the Persian 361
Gulf, with Bahrein a very poor second. While Bahrein cannot begin to 501
compare with Kuwait from a maritime standpoint, it probably ranks ahead of the latter as an emporium in the Persian Gulf. It serves for all the entrepôt trade to the eastern coast of Saudi Arabia, the goods coming into Bahrein in large dhows and being transshipped from Bahrein to Arabia in shallow-draft *jalbhuts* (see Plate 17—top). In 1939 Kuwait had 106 ocean-going *bhums* on the registry.[4] However, the majority of the Kuwait deepwater *bhums* sail to India, rather than to Africa, carrying dates from Basra. The mariners of Kuwait probably reached their present maritime status a little over a century ago. Palgrave traveled in the Persian Gulf in 1862-1863 and was much impressed with the maritime activity of Kuwait:

> Among all the seamen who ply the Persian Gulf, the mariners of [Kuwait] hold the first rank in daring, in skill, and in solid trustworthiness of character. Fifty years since their harbour with its little town . . . was a mere nothing; now it is the most active and the most important port of the northerly Gulf.[5]

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[3] R. Mookerji, *Indian Shipping* (Bombay: Longmans, Green and Co., 1912), p. 19.

[4] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 399.

[5] W. G. Palgrave, *A Year's Journey Through Central and Eastern Arabia (1862-63)* (3rd ed., London: Macmillan and Co., 1866), II, 386.

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However, a century before this, Kuwait was apparently noted more for its pearl fisheries (which are still important) than for its maritime trade, as Niebuhr related that in 1763

> Kuwait is a sea-port town. . . . The inhabitants live by the fishery of pearls and of fishes. They are said to employ in this species of naval industry more than 800 boats. In the favorable season of the year, this town is left almost desolate, everybody going out either to the fishing, or upon some trading adventure.[6]

In Niebuhr's time, in the eighteenth century, the Omani sailors from Muscat and Sur on the Gulf of Oman were the famed Arab mariners, for Niebuhr related that

> The inhabitants of Oman, although not fond of sea-fights, are nevertheless the best mariners in all Arabia. They have several good harbours, and employ many small vessels in the navigation between Jidda and Basra. To this last town there come annually fifty such vessels.[7]

In the middle of the last century Muscat was still an important maritime port, for in 1854 Osgood related that

> [439] Several ports in the Persian Gulf are tributary to it, and some excellent ships and a large number of [*baghlas*] employed in coasting and foreign trade, are owned by the Banian merchants at Muscat. In fact more than half of the trade of the Persian Gulf is carried on in ships owned at Muscat. . . . The trade with America, which is carried on chiefly by vessels from Salem does not exceed thirty-five or forty thousand dollars annually. Dates and cash are usually taken in exchange for American merchandize.[8]

In the present day Muscat has completely fallen from its former prized position and given way to Kuwait and Bahrein Island in the Persian Gulf. However, the port of Sur in Oman still carries on the maritime tradition of the Omanis and maintains a considerable fleet of dhows which have long been prominent in the trading along the African coast.

501 The craft that make the trip down the African coast from Arabia are by no means all large ocean-going vessels; craft of all sizes and descriptions come into Zanzibar. Villiers[9] tells of seeing a 30-foot *jalbhut* from Oman sailing down the African coast. Having owned and sailed a *jalbhut* of about the same size in the relatively calm Persian Gulf waters, I have nothing but the utmost respect for anyone with the nerve to sail such a small open boat several thousand miles in the potentially rougher Indian Ocean.

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[6] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 127.

[7] Ibid., 122.

[8] Osgood, *Notes of Travel* (Salem, 1854), p. 81.

[9] A. Villiers, *SS*, p. 190.

Estimate of the size of the dhow fleet sailing down the African coast 505 is difficult, as the Arab goes to extremes to evade official statistics. The Mombasa port statistics for 1937 showed 1,427 dhows entering the port.[10] Not all the ships sailing to Zanzibar put into Mombasa, which is only a day's sail from Zanzibar. It must also be remembered that a certain percentage of the figure represents Mombasa dhows and dhows of neighboring ports on local coastal trading ventures. In Aden some two thousand dhows trade in and out of the port every year. However, a large proportion of this figure represents Adenese dhows and neighboring dhows that do most of the cargo carrying to the small ports in the southern Red Sea and the Gulf of Aden; only a small percentage of this figure represents dhows passing through Aden on their way to Africa. Thus it would seem that the total number of craft sailing down the East African coast may well range over a thousand, depending upon economic conditions. Only a small portion of these are Indian craft, for Vaidya[11] estimates that about seventy-five Indian vessels of from one hundred to two hundred tons are engaged in the traffic to Africa, mostly from the Gulf of Cutch.

The Indian Ocean dhow trade is definitely a seasonal venture, as the 505 ships usually depend on the monsoons to carry them on fair winds to 132 their destinations. Vessels from the Persian Gulf and from India make one round trip a season when traveling south to East Africa. Arab and Persian ships start leaving the Persian Gulf in August and September with the first date crops and return in May and June, averaging eight to ten months for the round trip. Indian ships making the Africa run leave in November and return by June, averaging about six months for the round trip. The Indians have less time in which to make the trip because of the violent storms on the west coast of India during the southwest monsoon, which makes sailing unwise during the months of June, July, August, and September.

When making the trip between the Persian Gulf and India it is customary for the Arabs, Persians, and Indians to make two round trips a season. The vessels leave at the same time as the ships going to Africa; that is, in August and September for Persian Gulf ships, and in November for Indian ships. Because of the monsoon storms, the Indians have to be home by June, while the Arabs only have to be out of Indian waters by June. Actually, Arab ships start arriving in November and are ready to leave India after their second trip in March or April. These trips be-

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[10] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 413.

[11] K. B. Vaidya, *Sailing Vessel Traffic on the West Coast of India* (Bombay: Popular Book Depot, 1945), p. 57. I am indebted to Mr. Alexander Crosby Brown for calling this most valuable work to my attention.

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tween the Gulf and India usually average about three months a round trip.

The effect of the southwest monsoon in India is felt most in the southern part of India. In April the northeast winds change gradually to the southwest; the monsoon breaks in force on Ceylon in the third week in May and moves up the coast, hitting Bombay about the first week in June, and finally reaching Karachi about the last of June.

Along the Malabar coast it is not unusual for 150 inches of rain to fall in four months from May into September. However, farther north on the Sind coast there is only about twenty-five inches of rain during the whole southwest monsoon. Thus on the Malabar coast there is no coastal trade carried on from May through September. During a storm in May 1943 over two hundred vessels were sunk on the Malabar coast and more wrecked.[12] However, on the northern Sind coast of India native shipping is closed down only during June and July, so that there is a ten-month shipping season possible there, as compared to seven months on the Malabar coast. The west coast of India gets about a month more of the southwest monsoon than the western part of the Indian Ocean, where the northeast winds start about October. The northeast monsoon usually brings fair weather with little rain to the west coast of India. Away from the coast of India the southwest monsoon is a fair weather trade wind blowing up from Africa.

There are numerous Indian firms that will insure cargoes carried on Indian coastal sailing craft; the insurance rates give a vivid picture of the relative danger at sea during the various periods of the two monsoons:[13]

Season	*Month*	*Rate*
Change	November	1½%
Northeast Monsoon	December-January	1%
	February	1¼%
	March	1½-1¾%
Change	April	2½-6%
Southwest Monsoon	May	6-20%
	June-July-August	No insurance
	September	2½%
	October	1½%

This shows very graphically why Arab ships stay out of southern Indian

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[12] Ibid., p. 16.

[13] Ibid., p. 156. These rates are average rates for the southern part of the coast, and of course would change for the northern part of the coast where the southwest monsoon does not set in until June.

waters from May to September, and why most local Indian craft are 505
drawn up on the beaches. 132

II

Dates are probably as important a factor as the monsoons in maintaining the large lateen fleet in the waters of the Indian Ocean. By a lucky coincidence, the great date crop of Iraq begins to ripen just before the northeast monsoon sets in about October. The great maritime expansion of the port of Kuwait has probably been due in no small part to its proximity to Basra, the port through which most of Iraq's dates go. 439 505

Dhows come to Basra for dates from Kuwait, Bahrein, Persia, Oman, India, and even as far away as the Hadhramaut. Starting in the latter part of August and continuing into September, Kuwait deepwater ships are floated from the beaches, where they have rested for several months during the summer, making ready for the run to Basra to pick up dates. The farther the home port is from Basra, the earlier the ships must depart, so that craft from the Hadhramaut must allow a month or more to get to Basra, riding up to the Gulf of Oman on the summer monsoon and then working their way up the Persian Gulf, where the monsoon is not felt.

Almost without exception the date cargo is carried out of Basra on consignment for some merchant; sometimes the destination is known on leaving Basra, but often the consignment is sent to Aden or Mukalla (see Plate 23—bottom) in South Arabia for final shipping instructions from the Arab or Indian export firm shipping the dates. Dates are usually not carried into the Red Sea much past Hodeida in the Yemen in Kuwait ships, although Villiers[14] tells of a Kuwait *bhum* transporting a load of dates as far as Qizan in Saudi Arabia.

In such a manner dates have been leaving Iraq for decades bound for the southern shores—that is until the winter of 1949. In that winter, for the first time in many years, the great date-bearing Kuwait *bhum* fleet failed to appear in its usual strength in the waters along the southern shores of Arabia; only a portion of the usual quota appeared in Aden by the first of 1950. The dates that would ordinarily have come into Aden in Kuwait dhows came down unceremoniously under steam. What caused this abrupt change in the well-established status quo of the dhow trade? The same thing that has wrought so many other radical changes in the economy of the Middle East lately—oil!

Kuwait is actually a city-state with few industries except pearling, fishing, and shipbuilding; there are no farms, no date plantations, and only 361 465

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[14] A. Villiers, *SS*, p. 366.

361 a few scattered Bedouin tribes. The Kuwait Oil Company is now operat-
465 ing in high gear, and has apparently offered so many opportunities for natives that *nakhodas* (captains) have difficulty in getting men to sail their ships at the wages they can offer. Sailors never get any regular wages on a dhow, receiving a share of the earnings of the ship only after the voyage is over. Many sailors have apparently found that it is a comfortable feeling to receive a regular wage every week! It is too early yet to tell whether or not the change is permanent.

439 There has also been a noticeable fall-off in date-bearing Arab dhows
505 sailing to India, but apparently for a different reason. Vaidya[15] states that during the 1943-1944 season, presumably for the first time, sixty to seventy per cent of the Arab fleet that usually brought dates failed to appear because of Arab restrictions on the export of wet dates and because of the high prevailing prices of the dates. Thus, this case is not allied to the present situation prevailing in Kuwait, as during the 1943-1944 season dates presumably were not shipped to India by any other means.

However, even if Kuwait is unable to put its *bhums* to sea, the date crop in the future will still probably be carried out of the Persian Gulf in dhows as usual; it will take time to attain a balance again. Whether the port of Sur rises to the challenge or whether some Persian port takes the trade remains to be seen. The Suris from Oman are logical successors to Kuwait, for in times past they have been noted for taking cargoes at lower rates than the Kuwaiti or any other mariners could afford to, and they have a long maritime history.

It is interesting to note that oil activities in other areas in the Persian Gulf have drastically affected the marine activities of other coastal towns. Over ten years ago, the Saudi Arabian ports of Jubail, Qatif, and Darin used to send out over a hundred dhows yearly to join the Persian Gulf pearl fisheries. Now if they send out several dozen dhows it is news; the Arabs who used to dive for pearls now have steady jobs with the Arabian American Oil Company. The same has happened on Bahrein Island. The Bahrein *nakhodas* are no longer able to find a multitude of divers who will accept the wage the *nakhodas* are able to offer; thus the Bahrein pearl fleet is only a shadow of what it was a quarter of a century ago.

439 Most but not all Arab dhows load dates first; however, many Omani
226 dhows bring cargoes of dried fish and fish oil, for fishing is particularly good in the waters off Oman, and sharks and large tuna are caught in considerable amounts, both for home consumption and export. Sometimes, however, the Omanis may set out for Africa empty, or with only a partial

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[15] K. B. Vaidya, op. cit., p. 207.

cargo of fish if the local supply is not sufficient, and fish their way down 439
the Arabian and African coast, selling fish wherever they can. Then they 226
do the same thing on the way back. Mukalla is a favorite stopping place on the way down to Africa; I have seen dozens of *bedans* from Sur come into Mukalla and lay out their catch of shark or tuna on the beach to dry while they beached their dhows and put a coat of shark liver oil on their hulls (see Plate 18—top and bottom). Shark is a favorite Arab food; the [262]
flesh is cut off in strips or slabs and dried, while the liver is saved for its oil. The Arabs have little use for the tails or fins of the shark, but they are all meticulously saved and eventually find their way to China via India.

Thus these fish-bearing dhows from Oman start their trading venture from their home port, carrying a product of the port, and never carry other cargo; they trade fish from Sur to Zanzibar and back. For this trade [501]
they apparently always use the primitive *bedan*, usually ranging from fifty to sixty feet in length. The Suris export dates from Oman, or go to Basra for a cargo; when carrying dates they use large *sambuks* and *baghlas*.

In contrast to Arab and Persian ships which sail along the coasts the 439
whole way, whether going to India or Africa, Indian vessels usually sail 487
straight from India across the ocean for South Arabia or Africa with consignments of goods from Indian exporters at specific ports. Only rarely do they carry dates; their usual cargo consists of the products of India. From the Malabar coast they may carry coir rope stuffs, coir matting, teakwood, teak dugout canoes, coconuts, spices, cement, bricks, or tiles, while from Bombay they may pick up cotton piecegoods, groundnut oil, or tea. Most of the Indian ships that voyage to Arabia or Africa come from the Gulf of Cutch; few if any craft from Bombay or the Malabar coast carry this trade today.

In vivid contrast to the Arab date cargo and Indian cargo, which is usually on consignment, the replacement cargo for the rest of the voyage for the average Arab dhow is purchased by the *nakhoda* from the profit made on the date freight, for sale at the best market. After its date cargo has been discharged, the dhow becomes a trader in every connotation of the word, picking up and selling cargoes as she coasts south along the South Arabian and East African coast.

Sometimes the *nakhoda* may pick up a small cargo of partially spoiled dates to unload on the Africans; these the crew may wrap meticulously in fancy wrappers. At Aden the dhow may take on salt, sugar (from Java), rice (from Rangoon), canned goods, hardware, kerosene, or cotton goods and prints, and from the Hadhramaut coast the cargo may be dried shark

439 487 or other dried fish, *ghee* (clarified butter), honey, tobacco, grinding stones, and straw work (fans, mats, and baskets). It must be remembered that most of the cargo moving around the Middle Eastern waters in small vessels, whether dhows or small coastal steamers, is for the native trade and is destined for native bazaars, which are noted for the cheapness and poor quality of their wares. Once the dhow is loaded it is ready for the trip down the East African coast; however, the Arabs sometimes take a month or more to collect a full cargo.

Upon the *nakhoda* of the dhow rests the responsibility of getting another cargo for continuing down the African coast once the consigned date cargo is discharged. Invariably the *nakhoda* is the nominal owner of his dhow, so he acts as his own agent. As the cargo loaded after the dates are discharged is not on consignment, its selection is a matter of the *nakhoda's* judgment, with an eye to what will sell best in the African markets. However, a cargo that must be regarded as essentially on consignment is that of passengers. On some Africa-bound dhows passengers comprise a considerable portion of the cargo. The competition for passengers is very brisk, so that there is sometimes a race among the various *nakhodas*, who hasten to neighboring ports via motor launch as soon as their ships reach South Arabia to discharge their dates.

167 505 Through the dhows there is a constant flow of Arabs from South Arabia and Oman and of Indians from India. The immigrants usually become porters, hawkers, musicians, or beggars, but if they are very industrious, they may end up owning a small shop in the *suq*. Their usual aim in migrating is to work long enough so that they can go home after they save a little money; usually they never make enough to get out. Villiers[16] states that the Italian officials in Mogadiscio checked four thousand passengers on thirty-five dhows that were in the harbor when he was there in 1939. In 1937 the fare along the Hadhramaut coast between ports was three rupees.[17] In 1939 the fare from South Arabia to any African port was only eight rupees for men and twelve for women.[18] In Aden in 1950 the fare for natives traveling as deck passengers on A. Besse and Company dhows with no accommodations was 15 rupees to Berbera, Djibouti, and other ports about 150 miles from Aden; thirty rupees to Massaua, Mukalla, and ports about 450 miles away; and one hundred rupees to Jidda, Port Sudan, or ports approximately one thousand miles from Aden. These were fixed rates on the dhows operated by Besse; other dhows that

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[16] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 404.

[17] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 313.

[18] A. Villiers, *SS*, p. 78.

were trading down the coast could easily afford to undercut these rates. 167

As was mentioned above, women are usually charged higher rates for travel on dhows; this is because they have to be segregated and usually manage to make trouble, unintentional as it may be. Villiers[19] gives a graphic description of the nuisance a group of women can cause on an Arab dhow. For centuries women have apparently been creating disturbances on Arab dhows, for Niebuhr, who traveled down the Red Sea on a dhow in 1763, relates that

> In our passage, we found ourselves in danger of a worse misfortune than shipwreck. The females, who were lodged under us, more than once suffered linen, which they were drying, to catch fire, in consequence of which the vessel must have been burnt, if we had not been alarmed by their screams. . . . Those women were indeed extremely troublesome and indiscreet.[20]

Besides the ship's cargo, every member of the crew usually lays in a 439 store of goods that he personally peddles. Each sailor is allowed a sea chest 505 (see Plate 22—bottom), which he fills with print goods, turbans, flashlights, razors, sarongs, cigarettes, and perfumes which are later diluted. The *nakhoda* usually has some rugs or carved wooden chests to peddle (see Plate 17—bottom). Virtually none of this material enters Africa legally, but is for the most part smuggled in. Most of these trivial goods are carried in by the Arabs personally. Villiers[21] relates that he saw one man wear three gowns and eight sarongs, then wrap more sarongs around his knees, and make six trips through customs a day. Sometimes they are detected and stripped, but that is part of the risk. Often the Africans come out in canoes at night and remove the goods in small quantities. Frequently Arabs travel down the African coast on dhows as professional smugglers, living only for the smuggling they can accomplish. This sort of trading has been going on for centuries, for Paris[22] related that '. . . leur navires sont de vraies caravanes dans laquelles tous les matelots ont un intérêt.'

For the Arabs and the Persians, the trip down the African coast is leisurely and slow. It is not unusual for a dhow to stay in a port for three or four weeks haggling over a cargo, only to leave without having transacted any business. There is no rush, simply because there would be a long wait for the southwest monsoon to set in and carry them back north, if

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[19] Ibid., p. 78 ff.

[20] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 219.

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[21] A. Villiers, *SS*, p. 143.

[22] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra-Européens* (Paris, Bertrand, [1841]), p. 9. '. . . their ships are true caravans in which every sailor has an interest.'

439 they completed their trip down the African coast to Zanzibar too quickly.

505 Once the trading voyage down the African coast to Zanzibar is com-
pleted, Arab and Persian craft usually load a cargo of mangrove poles for
shipment back to Arabia, unless they have the rare luck of getting car-
[342 go on northern consignment. For centuries mangrove poles from Africa
314] have been used in the construction of houses in Arabia, where there is an
extreme shortage of wood of any kind. Indian dhows never load man-
grove poles since there is an abundance of wood in India. Mangrove trees
are plentiful along the East African coast in swamps at certain river
mouths; most poles come from the Rufiji Delta, a little south of Zanzibar,
and from Lamu, north of Zanzibar. The poles are cut by the dhow crews,
with the aid of Swahili cutters recruited for the purpose.

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314 Alan Villiers[22] spent a month in the Rufiji Delta with a Kuwait crew obtaining a cargo of mangrove poles and has given us a most vivid description of pole-gathering activities. In the Rufiji Delta the mangrove trees grow in the soft, muddy delta, so that the cutters must wade in mud and water all day long. The branches are stripped with small axes and the poles loaded into small dugout canoes and brought to collection points where they are graded and stamped by government inspectors. Frequent and sometimes constant rain and savage mosquitos make a pole-gathering trip in the Rufiji Delta a suffering hell!

The Arabs have to pay the firm holding the pole-concession on the swamp for the poles, but in true Arab fashion they manage to load considerably more poles than they pay for. There is a well-organized pole-stealing racket, with everyone in on it, from the cutters to checkers and inspectors, with the exception of the head government forestry inspector. As the prevailing market price for mangrove poles in Arabia is about the same as the list price in Africa, the Arabs could not make any profit if they did not manage to load some extra poles.

439 In addition to mangrove poles, the Arabs may load cocoanuts, cloves, cocoanut oil, soap, or vermicelli. A private venture of the crew for the return trip from Zanzibar may be in lemons. Around Zanzibar lemons can be bought by the canoe-load for several rupees. The crew can squeeze the lemons and bottle the juice in bottles they have acquired along the way, using a pinch of salt as a preservative. The juice is sold at a nice profit in northern ports, where it is diluted for making sherbet.

In making the trip home on the southwest monsoon the Arabs waste little time, for the sooner they can get back, the more time they have for other activities before it is time to ship out again. Dhows from Oman

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[22] A. Villiers, SS, pp. 237-261.

usually try to sell their mangrove poles along the South Arabian coast. 439
If they do not sell their poles by the time they get to Oman, they simply put them on the beach and wait until next season. Knowing that the Omanis flood South Arabian ports with poles, the Bahreinis, Kuwaitis, and Persians sail straight for the Persian Gulf and its more profitable markets. Likewise, the Omanis, realizing that the Persian Gulf markets are flooded in the early summer, wait until late summer if they have to sell their poles in the Persian Gulf. Sometimes dhows from Oman carry firewood or fish oil in addition to mangrove poles if they go north to Basra for dates.

If a vessel sells its cargo of mangrove poles a considerable distance from her home port, it may load coral rock as ballast if it is available; this may be sold in Kuwait and ports in eastern Arabia. The coral rock is pried off the sea bottom and is a common commodity for construction 316
purposes in a land where building rock is almost as scarce as wood on the sterile sandy coast.

As we have seen above, Persian and Arab ships make two trips to India during a season, usually carrying dates on consignment, but sometimes they carry dried fish, dried fruit, palm leaf mats, and coffee from the Persian Gulf and Arabia. After they have unloaded, they pick up a cargo of the products of India for sale in their native waters. These products consist mainly of teakwood timber, teak dugout canoes, coir roping stuff, coir matting, bamboo, cotton-goods, cocoanuts, chests, chairs, spices, and tea. Cement and tiles are occasionally loaded, but bricks (a very common product of the Malabar coast) are rarely loaded, as they are manufactured in Iraq and shipped out of Basra. Virtually all the teakwood for dhow construction comes from India, and Indian teak dugout canoes have been spread up and down the shores of the Indian Ocean, the Persian Gulf, and the Red Sea by dhows.

The *Periplus of the Erythraean Sea* tells of ships coasting on the African coast and trading cargoes as they went two thousand years ago. But cargoes have changed considerably from those ancient times when alabaster, myrrh, and frankincense were exported from South Arabia and tortoise shell, hippopotamus teeth, cinnamon, and slaves were exported from East Africa.

By 1800, slaves had become the chief cargo out of East Africa, with 567
Zanzibar as the center; however, with European intrusion into the waters of the Indian Ocean, eventually the British more or less successfully stopped the slave trade, which was in large part carried on by the Omanis. It has been estimated that by 1873 there were thirty thousand slaves ex-

567 ported annually from East Africa to the Persian Gulf and Arabia.[24] The term 'human cargo' is no exaggeration, for slaves were packed in the holds of dhows with an eye only towards maximum capacity. There is an old sketch of a small dhow loaded with 156 slaves (men, women, and children) packed into the hold, on the bottom and on two bamboo decks above with only three feet clearance between decks (see Figure 3).[25]

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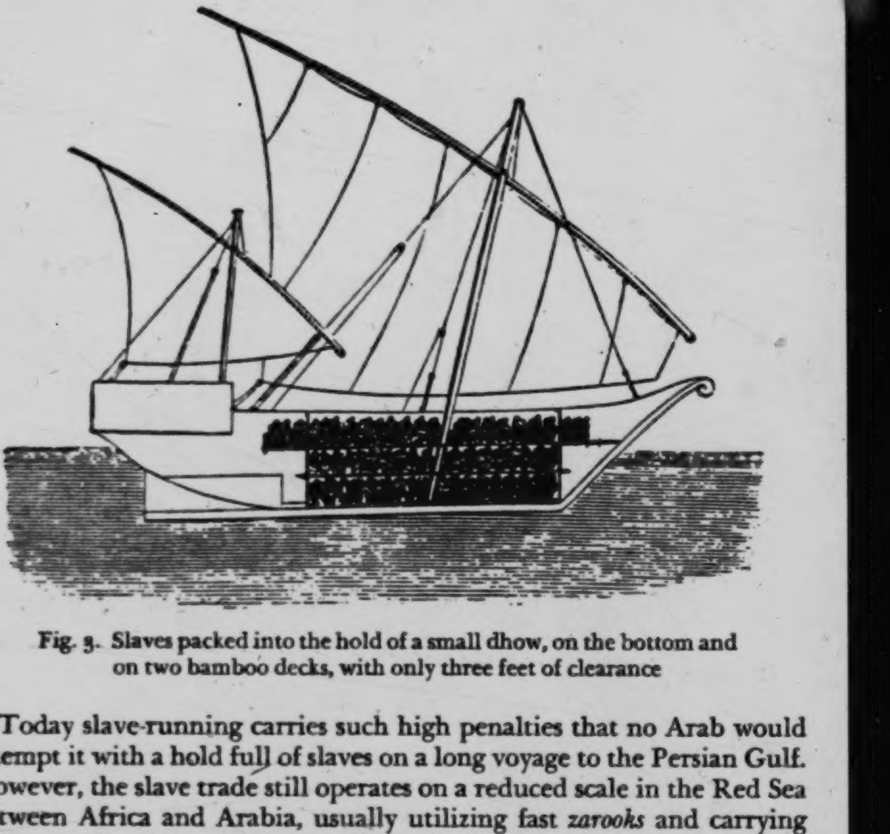

Fig. 3. Slaves packed into the hold of a small dhow, on the bottom and on two bamboo decks, with only three feet of clearance

527 Today slave-running carries such high penalties that no Arab would attempt it with a hold full of slaves on a long voyage to the Persian Gulf. However, the slave trade still operates on a reduced scale in the Red Sea between Africa and Arabia, usually utilizing fast *zarooks* and carrying only a small number of slaves. The trade is still active, mainly because both slavery and white slavery still flourish in Saudi Arabia and Yemen. These two countries signed neither of the two world conventions:. the one in 1921 forbidding traffic in women and children and the one in 1933

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113 [24] Anonymous, 'Vessels Used in the Zanzibar Slave Trade,' *The Illustrated London News*, LXII (March, 1873), 208-209.

[25] Ibid.

forbidding traffic in adult women;[26] in 1948 these same two countries 567 failed to file reports on efforts to suppress traffic in women, children, and obscene publications.[27]

Slaving is difficult to stamp out, as the African victims are led to believe that their social status will be bettered. Actually, there is some truth in this, for an African, even as a slave, has a far better life in Arabia, since the Arabs treat their slaves fairly.

British regulations at Zanzibar provide that dhows must carry crew members voluntarily signed on and not in excess of that needed to sail the ship.[28] At Mombasa, *British Regulations for Native Vessels* provides that no man may be signed on as a seaman without satisfying the officials that he has voluntarily shipped, and further that no passengers are to be shipped without the knowledge of the authorities.[29] However, Villiers[30] relates that an Omani *sambuk* intentionally ran down a fishing canoe off Africa and 'saved' two Africans to be sold later as slaves in Arabia.

In essentially the same category as the slave is any other illegal or illicit 439 trade. During World War I gun-running was at a high, but now the trade is not very prosperous. There is considerable cargo smuggled to avoid duties; tea and other goods are run to Persia by the Arabs on the Trucial Coast of Oman—the old Pirate Coast.

The customs and immigration officials in Africa do not have much use 486 for the Arab deepwaterman, with his Arab passengers and smuggling crew. On the other hand, the Arab takes delight in deception, and attempts to confuse the European as much as possible. No large dhow ever [505] carries a visible name; its papers usually contain an official name, but more often the dhow is known by the name of the *nakhoda,* who is usually the nominal owner.

As soon as an Arab dhow reaches an African port, the local officials try to get a passenger and crew list; in this they never succeed, as certain of the passengers always vanish into the native anchorage as soon as the anchor is down, to return after the survey is made. This is easy, as all the native craft are herded into a separated anchorage and often new arrivals have to drive into small spaces in the middle of the anchorage.

Few carry passports or other identification, so actual identification is

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[26] J. L. Carver, 'Slavery's Last Stronghold,' *United Nations World,* II, No. 5 (June, 1948), 24-27. 413

[27] However, in all fairness it should be pointed out that the USSR, Afghanistan, Byelorussia, Honduras, Iceland, and Norway also failed to make reports on the grounds that the problem has not arisen in their countries.

[28] A. Villiers, *SS,* p. 212.

[29] Ibid., p. 190.

[30] Ibid.

486 difficult, if not impossible. When shipping out of a port, an Arab simply gets approval from the port police and moves his chest aboard. However, in Africa some ports will not allow passengers to discharge; to get around this, the Arab *nakhoda* sometimes obtains permission for shore leave for some of his passengers, and brings back a different group, who want to leave. Sometimes as much as twenty per cent of a passenger list of several hundred may be shifted in a port, but the dhow still leaves with a full complement, so everyone is happy.

Regulations are a challenge to the Arab, although some of his disregard for regulations may be classed as nothing less than pure thievery. Villiers[21] relates how a Persian dhow managed to load two hundred tons of salt stolen from the Italians at Haifun in 1939. The salt was successfully loaded at night from small canoes, but the dhow was apprehended just as it was ready to sail, and the *nakhoda* was thrown into jail.

III

502 487 Arab navigation, on the run from Arabia down the African coast or over to India, is little more than dead reckoning, and a poor brand at that. The only instrument the large Arab craft carries is a compass, which is assumed to give a true reading. Most Arabs have never heard of compass deviation and will not believe that a compass can give anything but a true reading. Besides a compass, the deep sea dhows sometimes carry a chart, which may be of surprisingly recent origin or of surprisingly ancient origin; Villiers[22] tells of once seeing an Arab pilot armed with a chart of the Indian Ocean corrected to 1746! A few Arabs carry Isa Kitamis' *Directory of Eastern Seas* in Arabic, which contains many useful descriptions of the landmarks which may be encountered.

However, as the Arab navigates, a 1746 chart and a faulty compass are ample for his needs, for he simply coasts along, usually in sight of land. Going down to Africa, he sails before the wind with land to starboard; returning he sails before the wind with land to port. The seas that he sails are like a book to him, and he seldom needs his chart; this is possible, as there are no reefs along the African way. When going to India the Arab proceeds in the same manner, coasting along. In going to Africa, the Arab may get out of sight of land while crossing the Gulf of Aden, but it is only a matter of a day or so, as the land is mountainous and high on both sides of the Gulf. In sailing the waters of the Persian Gulf, the dhow

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[21] Ibid., p. 112.

[22] Ibid., p. 149.

is often out of sight of land, at least on the Arabian side, as the Arabian 502
side is treacherous and the coast low and sterile. 487

A dhow sailing from the Persian Gulf to Africa or to India does not actually go at all out of the way by coasting, as a glance at a map will show. This practice of coasting has the added advantage of keeping the dhow within easy rowing distance of land in case the ship should go down, a possibility never overlooked.

In contrast to the Arabs and the Persians, the Indians still navigate their dhows over open ocean from India. However, a glance at the map will show the reason—craft from India would have to go far out of their way to coast to Africa in sight of land. Thus by necessity the Indians have maintained the knowledge of navigation that the Arabs and Persians had mastered so successfully in medieval times; being able to get along successfully by coasting their deepwater craft, the Arabs and Persians have lost the navigational knowledge which in medieval times brought them in contact with junks from China in the waters farther east. When the Arab has to sail a navigated course, he usually, though somewhat reluctantly, gets an Indian navigator. It is interesting to note that the ancient mariners in Greek and Roman times successfully navigated the southern route to India using only the sun and the stars; the mariners' compass was not invented until the Middle Ages.

There is one other alleged aid to navigation in the Indian Ocean that was known to the ancients. Niebuhr traveled from Arabia to India via dhow in 1763 and related that

> The passage between Arabia and India was formerly thought very dangerous. Ships were carried on by so rapid a current, that they could neither keep their reckoning, nor distinguish the coast during the rainy season: several were consequently lost on the low coasts of Malabar. These misfortunes have ceased to take place, since an observation was made, which has been thought new, although Arrian speaks of it being known to the ancients; in the Indian Ocean, at a certain distance from the land, a great many water serpents, from 12 to 13 inches in length, are to be seen rising above the surface of the water. When these serpents are seen, they are an indication that the coast is exactly two degrees distant. . . . We saw some of these serpents, for the first time, on the evening of the 9th of September; on the 11th we landed in the harbour of Bombay.[33]

On the run down to Africa the Arabs sail by night as well as by day; at night they make sure they are well out at sea and set a safe course by the compass. With its many reefs the Red Sea is an exception, for even local craft with a knowledge of the way anchor by night and sail by day

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[33] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 373.

502 whenever they are near reefs. An exception to this is the slave-runner
487 dashing from Africa to Arabia, for his activities are best carried on under cover of darkness. The reefs in the Red Sea are the main reason why foreign dhows do not venture very far into its waters.

In the field of navigation the Arabs are little impressed with Vasco da Gama's voyage, so famous in the West.[34] The Arabs take all the credit themselves; they claim that da Gama forced an Arab pilot to show him the way to India. Arab legend relates that an Ibn Majid, a famous pilot from the Persian Gulf, was delivered to da Gama by the Sheikh of Malindi (in present-day Kenya) as a hostage for stopping the siege of the town; the Arabs immortalize this Persian Gulf pilot and associate da Gama only with European intrusion into their territories.

501 The Arab dhow is actually not a very seaworthy craft (see Plate 19—top). It manages very successfully in fair weather, but in any kind of rough weather the dhow is likely to get into trouble fast. The *baghla* is apparently considerably less seaworthy than the *bhum,* as even Arab passengers (who are not particularly well informed about anything) prefer to travel in *bhums.*[35] Apparently the great transom stern of the *baghla* tends to make the craft unmanageable in heavy seas.

In the African port of Mombasa a Casualty Book listing all dhow casualties in the vicinity of the port shows that, while there were frequent accidents with small craft and less with larger craft, there was little loss of life.[36] This stems from the Arab's method of coasting close enough to land so that he can row ashore. However, no records list the number of dhows that have gone down with complete loss of life.

If the dhow springs a leak, it may often be disastrous. On a heavily-laden dhow the crew cannot get at the leak to repair it, and not having any pumps they do not even have time to start bailing. If they can get at it, the Arabs have been known to stop a leak where a plank was stove in by filling a cloth with rice, tying a string around the gathered neck and stuffing it in the hole; when the rice expands it fills the hole tightly.

000 Villiers[37] relates that a 178-ton Indian dhow loaded with mats sprang a leak and sank off Africa because the cargo prevented anyone from getting at the leak. The crew took fifteen minutes to clear the dhow, and very soon afterwards the sea was over her decks. The early English traveler Palgrave[38] had the same thing happen to him in 1863—an event which

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113 [34] A. Villiers, *SS*, p. 197.

[35] Ibid., p. 106.

[36] Ibid., pp. 191-194.

[37] Ibid., p. 193.

[38] W. G. Palgrave, *Central and Eastern Arabia* (3rd ed., London: Macmillan and Co., 1866), II, 342 ff.

nearly put an end to his traveling. While sailing in a *baghla* Palgrave was 000
caught in a hurricane just off Muscat; the dhow lay to and drifted. As the storm set in with violence the dhow sprang a leak and in a matter of minutes settled into the sea. After a night in a small boat, Palgrave and eight others (ten men were lost) reached a beach in Oman. Ten other dhows, part Persian and part Omani, also went down off Muscat in this storm with complete loss of life on three of the craft.

A heavily-laden dhow hull-down in the water is extremely vulnerable 501
to rain storms and squalls, even if she does not spring a leak. If such a dhow is caught in a deluge of rain, it may go down very quickly, for without any pumps there is hardly time even to start to hand-bail from the small well. The smaller open-waisted boats and the decked ocean sailers catch all rain, and if enough rain comes down fast enough, the craft simply goes down. Villiers[89] relates how a huge new 500-ton *bhum* sailed out of India on its maiden voyage with a cargo of coir. Caught in a rain squall the first night, the dhow filled with water and scuttled. However, in this instance, the rain apparently swelled the coir, which in turn split the hull. Most dhows lash palm mats amidship to extend the gunwales, whether they are open-waisted or decked; however, this is not very effective in rough weather.

In heavy winds it is customary for the dhow to split a seam or two in its great driving mainsail. However, the sailors will tell you that weak seams have their virtues and act as a safety device to protect both the sail-cloth and the mast from serious damage in sudden blows. In very rough weather the dhow sailor douses his sail and simply allows the craft to drift, without using any steadying sails or sea anchors. Usually they are caught in water too deep for their anchor lines and feel that drifting is the safest way.

The dhow is never prepared for any emergency at sea—it copes with it as best it can when the occasion arises. The dhow never carries any life preservers, life jackets, flares, or any other safety devices. The exception to this is the many Indian deepwatermen which sport life preservers on the stern. If a man falls overboard, Arabs head the dhow up and pull him aboard after he swims to the dhow; if the currents are too strong, they lower the longboat. However, the longboat is never ready to be lowered, as there are usually no davits on a dhow, the longboat being carried on deck; thus to lower it takes considerable time. Nothing is ever secured on board a dhow, on deck or below, and in rough weather the Arab waits until something goes scudding across the deck before he fastens it down;

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[89] A. Villiers, *SS*, p. 365.

501 sometimes it is too late, for it may have already gone overboard. The Arab usually has no lines ready when he comes into a mooring and he may just as often throw a loose anchor over as not.

501 Dhows never show lights of any kind at night, whether under way or
502 anchored. Although British regulations have forced many dhows from various ports on the Indian Ocean to carry lights, there is unfortunately no way of forcing the Arabs to use them. This undoubtedly results from centuries of travel in pirate-infested waters, where a light at night served only as a signal for sudden attack from pirates. There is only a weak light in the binnacle with which to see the course; everything else is dark. Not even when in the sea lanes off South Arabia, in the Persian Gulf, or in the Red Sea, where freighters and tankers beat a constant path, does the dhow show a light. In case of collision at night, the boat that can prove that it showed lights has a legal edge.

At the West Pier at Ras Tanura on the Persian Gulf, there is often considerable movement of Arab dhows and Arab *lanchs* (kerosene-driven native launches). Dhows slip in and out of their mooring like shadows on nights so black that a dirty white sail could not be seen ten feet away. One night a *lanch*, all of which carry lights, hit a rock-laden dhow amidship and in a matter of seconds sent her to the bottom in forty feet of water. Native divers unloaded her, and she was eventually salvaged. Since then, dhows make a frantic attempt to fan their coffee fires up to a bright glow when they see any *lanch* lights approaching, but they still do not carry standard lights. It is an eerie sight to see the glow of a charcoal fire suddenly light up a large lateen sail directly in your path!

501 When sailing along their own coasts, the Arabs like to sail in two's and
502 three's. This arises from the fact that piracy is by no means a thing of the
721 past. For centuries piracy and robbery were honorable professions among many tribes along the long Arabian littoral; such a reputation did the piratical Omani have during the last half of the last century that the very sight of their characteristic *bedans* and *batils* brought actual fear to the population of Zanzibar.[40] Niebuhr noted dangerous conditions in the Red Sea two centuries ago:

> Although from pirates properly so called, there is little to be feared in the Arabic gulfh [Red Sea], yet, so unskilled are the mariners in these latitudes, that they dare not venture to any distance from the coasts. This timorous mode of sailing might expose a single vessel to the robbery of the Arabs; to avoid which, these ships sail in little fleets; four always setting out together, that they may join to defend themselves.[41]

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[40] G. L. Sulivan, *Dhow Chasing* (London, 1873), p. 102.

[41] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 212.

It was in the Red Sea that an American ship was plundered in the early 721
nineteenth century; however, the pirates came from the South Arabian coast. This has been described by Osgood:

> Conspicuous among the former rulers of Dhafar was Seyed Mohammad Akil, who . . . was led by ambition and avarice to turn pirate. Among other prizes, in June 1806, he captured, plundered, and burned near the harbor of Hodeida, in the Red Sea, the American ship *Essex*, belonging to Salem, and commanded by Joseph Orne. Captain Orne had arrived in the *Essex* at Mocha with sixty thousand dollars to purchase coffee. He was persuaded to sail from Mocha for Hodeida by Mohammad Akil, who, keeping him company in an armed ship, seized the vessel soon after leaving Mocha, and slaughtered all on board except a Dutch boy named John Herman Poll, whom he carried to Dhafar. The young man was kept in servitude, educated as a Mahometan, married and had several children, and when last visited, within a few years, seemed perfectly contented with his lot, having nearly forgotten his mother tongue.[42]

While the Red Sea is now perfectly safe from such attacks, many areas of the long Arabian littoral in the Arabian Sea and the Persian Gulf are definitely not. O'Shea[43] relates that in the Persian Gulf as late as 1944 a large Arab dhow bound for the Trucial Coast of Oman with foodstuffs was attacked by a Persian dhow and the whole Arab crew murdered. Representations were made to the Iran government by the Political Agent of Trucial Oman; the pirates were supposedly apprehended and hanged by the Iran government.

Around the Kuria Muria Islands off the South Arabian coast, the coastal 721
tribes are very piratical. Villiers[44] relates that in recent times the tribes on 619
the Arabian coast near these islands have been known to seize ships at night, plunder the cargo, burn the ship and sell the crew in the interior. They have also been known to cut moorings at night, thereby allowing the ship to drift onto the rocks; then they salvage the cargo. This is apparently nothing new, for when Bent sailed along these coasts in the late 1890's, he noted the extreme suspicion of dhow sailors for the inhabitants of the coast:

> While at anchor we heard shouts and cries to come to land, but our sailors would do nothing of the sort. They said a single man might often be seen calling that he was wrecked, and asking to be fetched away, but a party of armed men would be behind a rock, and come out and murder the benevolent crew and steal the boat.[45]

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[42] Osgood, *Notes of Travel* (Salem, 1854), pp. 119-120.

[43] R. O'Shea, *The Sand Kings of Oman* (London: Methuen and Company, 1947), p. 116.

[44] A. Villiers, *SS*, pp. 292-293.

[45] T. Bent, *Southern Arabia* (London: Smith Elder and Co., 1900), p. 279.

721 619 Parts of this coast are as dangerous for Europeans as for Arabs, and in some instances more so for Europeans. Even as late as December 1949 on the supposedly peaceful coast of the Aden Protectorate an act of violence occurred against a British-owned yacht. I talked to the survivors several months later in Mukalla. They related how the 110-foot motor launch *Anne Loretta* with an Englishman, his wife, and one Arab crewman was cruising a little off shore when she touched a sand bar. The captain went ashore to lay out a stern anchor and was seized by the Arabs of the local Ardiab tribe on the coast; then his wife and the Arab went ashore to see what had happened and were likewise seized. Several British officials to whom I talked admitted that these two English people came very close to death in the hands of these unpacified coastal inhabitants. The British explanation was that the area was between the Eastern and Western Aden Protectorates where the tribes had not been pacified, and the yacht should never have landed there.

IV

505 Every Arab dhow of ocean-going tonnage has a captain *(nakhoda)*, a mate, three quartermasters (or helmsmen), a boatswain, and perhaps a boatswain's mate in addition to the crew. The total complement on a 100-ton ship may be from twenty to twenty-five men, while on a 200-ton ship there will be from thirty-five to forty men. The small coasters of up to 50 tons have crews up to eight or ten; there are no officials on these
[291] small craft outside of the *nakhoda*. There is no formal dress on a dhow; often it is difficult to tell the *nakhoda* from the crew, as everyone usually wears simply a loin cloth or the long Arab gown and a head cloth.

A *nakhoda* is much more than the word 'captain' implies; he acts as navigator, pilot, shipwright, sailmaker, ropemaker, agent for buying and selling cargo, agent for freight, agent for recruiting passengers, cashier, bookkeeper, judge, and arbitrator. So completely does the *nakhoda* handle the ship and the ship's affairs that the mate has little to do when the *nakhoda* is aboard. Only when the *nakhoda* leaves the ship does the mate take over; that is the mate's only excuse for existence.

505 396 Many of the Kuwait ships on the run to Africa carry carpenters aboard—not as ship's carpenters, but for the construction of small dhows for sale in African waters. Presumably they can sell them profitably in Africa at a price cheaper than the local boatbuilders! However, a small 10-ton dhow that was built aboard the Kuwait *bhum* on which Villiers sailed down the African coast, had to be left on the beach at Zanzibar in charge of a ship's agent, because the dhow could not be sold at the price de-

manded.[44] Few dhows carry ship's carpenters; they hire a carpenter when they need one. 505 396

505 The actual duties of a dhow crew may often begin weeks or months before the voyage starts. If the dhow is new, the first duties of the crew are to rig the ship and make the sails (see Plate 20—top). A boatbuilder furnishes only the hull with masts and yards; fitting out the ship is considered part of the work preliminary to making the voyage, and the sailors do not actually receive money for this preliminary work, as they are paid only when the voyage is over. If they actually need it, the *nakhoda* will give the sailors cash advances; these advances are later deducted from the sailor's share of the vessel's earnings at the end of the voyage. Thus the *nakhoda* fits out his ship at no cost to himself so far as labor goes—the crew actually furnishes it for nothing! Besides this the crew does all the stevedoring on any cargo the dhow may carry, also transporting the cargo in the longboat when required (see Plate 19—bottom).

Arab dhows keep no schedule and know little routine. At sea everyone, including the *nakhoda*, usually loses track of time. Friday, the Moslem day of rest, is not observed at sea, so the sailors work the month around and days come to mean nothing; it is easier not even to try to keep track of them. The only track of time the Arabs keep is the occurrence of Ramadhan, the month when the Moslems fast during the daylight hours. [805] The Arabs know whether Ramadhan is before them or whether it has passed; if it is ahead of them, they keep a very rough idea of how far off it is.

When there is no work, the crew sleeps in a shady spot, if one is available—on the cargo or a pad. All hands turn out day and night for any work. It is not uncommon to see a dhow-load of sleeping sailors pass in broad daylight, but they can be on their feet in a second.

Watches are informal and virtually nonexistent on a dhow. Usually the *nakhoda* keeps watch during the day and the mate or a quartermaster or a boatswain keeps watch during the night. It usually turns out that the helmsman keeps watch, as he is the only man who has to keep awake! The carpenter on a Kuwait ship stands no watches and has few other duties outside of his boatbuilding.

There is a general working period of several hours for all hands every day, usually during the morning. The most essential duty is bailing; the foul bilge water is brought up from a small bailing-well in buckets, and is either dumped into a bailing-trough to flow overboard or dumped overboard via a fireman's bucket brigade. The decks are never washed down, as the water would drain below, through the leaky decks, rather than

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[44] A. Villiers, SS, p. 268.

505 overboard, and would have to be bailed out again. Other everyday duties may consist of ropemaking and sail-sewing (see Plate 20—bottom).

502 Before the sailing duties of the crew can be fully visualized, one must understand how a dhow is rigged. The ocean-going variety is invariably two-masted, although some of the smaller ocean-going craft, that should more properly be classed as coasters, have a single mast. Most large ocean-going dhows can raise a third mast far aft as a sort of jigger if they so desire; this mast and sail are usually borrowed from the longboat. These large dhows never carry this third mast as standard rigging; it is erected temporarily only when needed.

Usually when sailing before the wind large dhows carry only their great mainsails; there is little advantage in raising the smaller mizzen when sailing dead downwind with the mainsail up. However, when sailing downwind in a quartering wind, the mizzen is often raised in addition to the large mainsail. Many of the Indian and some Persian *baghlas* can send up a lateen topsail over the mainsail. Like the ornate carved stern of the *baghla,* which was presumably copied from European galleons, these topsails were probably also copied from the Europeans.[47] It is interesting to note that the *bhum,* which has risen to prominence as an ocean sailer in the last century, apparently never carries such a topsail.[48] The trend among the Arabs is to the least number of sails possible; the Arabs do not consider the setting of a topsail or a jiggermast and sail worth the effort, and few Arabs even carry a topsail.

When going to windward in light airs most large ocean-going dhows can set four sails: the lateen mainsail, the lateen mizzen, the lateen jigger, and a jib. The jib is rigged from the end of a light boom extended over the stemhead. With a big jib on, the jigger will help balance the canvas and ease the steering, but the Arabs still usually consider it too much trouble to set the jigger.

Thus, while some of the large ocean-going dhows have five different sails (main, mizzen, jigger, jib, and topsail) which they can set, they often carry only the mainsail. In adhering to their policy of a few big sails, rather than a number of small sails, the Arabs usually carry three different sizes of mainsails and two different sizes of mizzens. They adjust the size of the main to take care of the wind and try not to set any other sails. However, in light airs, they are often forced to set more canvas, but do it grudgingly.

The mainmast and yard on an ocean-going dhow are nothing less than gigantic. The mainmast on a large two-masted dhow is about seventy-five 502 per cent of the overall length of the craft; for a 150-ton dhow it is a massive tree trunk that will tower more than seventy-five feet above the deck and have a diameter of over two feet. The mast is not tapered much, being only slightly smaller at the top than at the bottom. The huge size is necessitated by the fact that, because of the way the Arabs sail, the mast must at times stand unsupported with the sail raised and working. The main yard is equally massive, attaining almost the overall length of the vessel but having a diameter only about one-half that of the mast. The yard is a tapered spar made of stout poles fished and lashed together. On a 150-ton dhow the main yard may weigh over three thousand pounds and the largest mainsail may weigh up to one thousand pounds. This four-thousand-odd pounds of teakwood and cloth is raised solely by manpower using a two-part, twofold purchase.

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[47] R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), Plate 9.

[48] A. Villiers, *SS*, p. 277.

When the dhow is ready to sail, the longboat must be hoisted and stowed, and the anchors must be raised. In rough weather a large dhow may lay down four or more anchors, as the moorings are usually foul. The anchors are raised to the surface without any tackle, and then they may be brought aboard by a fall from the masthead.

Before the mainsail may be raised on an ocean-going dhow the huge sail must be bent to the massive yard by a series of robands along the whole head. After the sail is bent to the yard, it is secured lightly in stops, so that the yard may be hoisted with the sail neatly furled on it. After the yard is finally mastheaded and the halliards belayed, the sail may be released by a tug on the sheet, which breaks the sail out of the stops. The sheet acts as a rip cord and sends the sail billowing out like a parachute; if the breeze is light, the sail will flutter out like a flag, but if the breeze is fresh, the sail will open with a cannon-like roar. On smaller coastal dhows the sail is not gathered onto the yard in stops, the yard being simply raised with the sail in sailing position.

However, the yard and the sail are by no means raised as easily as one 533 might gather from reading the preceding. As was pointed out above, the 535 yard and sail on a 150-ton dhow may weigh over four thousand pounds and are hoisted by sheer manpower, using only a two-part, twofold purchase. 502 Raising the yard and sail is a great occasion on any dhow, large or small—not by way of celebration, but because it represents so much work. There is a great ritual in hoisting the yard, the ritual becoming more important the larger the dhow. With the order to raise the yard, the sailors start a native song and dance; the pace quickens, and at an appointed place in the singing the sailors fall to the halliards. The halliards are at-

533 tacked almost savagely as the men chant praises to Allah and stamp the
535 deck as they shuffle by for another chance at the halliard. When the yard,
502 with the sail gathered in stops, is halfway up, the sailors may stop working and go into a dance, snapping their fingers and stamping the deck. On a large ocean-going dhow of 150 tons, it takes a whole hour to masthead the yard—about one-third of which is spent in dancing and singing. On a smaller dhow there is much less organization in raising the sail, but it is usually done faster with less song and dance.

502 Once the sail is raised and the dhow is under way, the sailors' duties are usually completed for a considerable length of time. However, if the weather changes, the sail may have to be changed. Once under way it may take several hours on a large dhow to lower one sail and replace it with a smaller (or larger) sail. The course may also have to be changed at times, regardless of weather changes. The Arab dhow tacks by wearing while sailing downwind; in wearing all hands have appointed stations, where stays, tacks, and sheets must be shifted.[49]

501 There is one more important duty carried out semiannually on the great ocean-going dhows running to and from Africa and India: that is cleaning the bottom. The bottom is usually cleaned and refinished before the dhow makes its return trip (from Africa or India) and after it has finished its seasonal trip. The dhow is moved into a shelving beach at high tide, and the ship is lightened as much as possible by the removal of any cargo and its yards, which are lowered overboard. The mainmast is lowered in its gear to the aft of the V-shaped trough in which it rests. Sometimes, depending on the dhow, it is necessary to completely unship the mast; at other times it is sufficient simply to lower it so that its resistance to the wind (and thus its toppling effect) is at a minimum. It should be remembered that the mast on a medium-sized ocean-going dhow is a massive teakwood spar weighing around five tons, while on a large dhow it may run well over ten tons.

When the dhow is lightened sufficiently, it is kedged into shallow water to the songs and chants of the crew laboring on the anchor lines. With the falling tide, mangrove pole props are lashed along the gunwales on each side so that as the tide leaves the vessel dry, it is propped up on stilts. With each successive tide change, the stilts must be carefully reset, as the vessel is partially refloated. To allow a large dhow to topple over is a serious matter, as it may have to lie there until a spring tide lifts it.

When the tide has receded sufficiently, the sailors set to work removing the old paying-stuff with scrapers. After this is removed they immediately start to put on the new compound, a mixture of tallow and lime, in thick layers with the flat of their hands. As soon as the task is finished, the dhow is kedged into deeper water, re-rigged, and is ready to sail. If no planks have to be replaced, this operation should not consume more than two or three days. A unique though rather incredible means of cleaning the bottom of an Arab dhow is recorded by Villiers,[80] who relates that, while becalmed off Oman, the sailors on the *bhum* on which he was sailing dived overboard, and scraped the sea growth off the ship's bottom while swimming slowly from side to side! The *bhum* in this instance was drawing thirteen feet of water. 501

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[49] For a description of 'wearing' see R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 122-129.

All work on a large dhow is done by brute strength, and when the crew is working, the pace is very strenuous. All hands carry out orders day and night with the same fanatic vigor—it almost seems as though their lives depended upon the particular task they were doing at the moment. The *nakhoda* plays no favorites; when the tempo becomes too fast, those too old or feeble will drop out or be given a sea burial in a cover of palm fronds. Thus it is easy to understand why, when there is no work, all hands are to be found asleep. Thus have the dhows sailed for centuries on their unhurried voyages, and so they will probably continue for centuries. Of all the crews—Arab, Persian, and Indian—the Arabs from Kuwait attack their work with the most energy, almost fanatically. 505

At times the large deepwater dhows still have a pomp and ceremony about them that give them a dash of color never to be found in coastal dhows. Whenever coming into a large port that can supply the Arab sailor with the diverse entertainment that sailors of all lands expect after a long voyage, there is a great celebration. This consists of the dance so familiar among male Arabs throughout the Arab world—dull shuffling, agitating, jumping and hopping, accompanied by the loud noise of snapping fingers and moaning music from drums and tambourines. Sometimes the sailors get so wrapped-up in their dancing while entering a port that they are late in executing orders. Quite naturally, the longer a dhow has been at sea and the farther it is from its home port, the greater the celebration. 501 535

V

On even the largest Arab deepwatermen, the crew has no quarters, as there is no 'below'; all hands live on deck, finding the softest place they can. Usually the sailor's clothes—a nightshirt-like gown or a sarong and 501

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[80] A. Villiers, SS, p. 298.

501 a headdress—serve as his bedding. The Arab has not been spoiled by soft mattresses and can get a good night's rest on a floor, deck, or hard ground. The *nakhoda,* the mate, and a few selected passengers live on the poop. Sometimes an awning is spread over the poop to keep the burning sun out, and other times it is bare; sometimes a Persian rug is spread on the poop. There is invariably a cabin beneath the poop for the storage of valuable cargo and ship's stores (see Plate 22—top). This cabin is usually only the space between the continuation of the main deck and the poop deck. Sometimes there are doors leading forward, but more often it is simply open.

As there is no below on a dhow, there are quite naturally no toilets below. Dhows do carry toilets, however, in the form of one-holed privies, hung overboard off the poop (see Plate 21—bottom). They are usually on the port side, but are sometimes seen on the starboard; I once saw a large *sambuk* in Aden with two, one to port and one to starboard. These lack the privacy of a privy, and are almost completely open. Freya Stark[31] had to have the captain rig up a special awning for her when she traveled down the South Arabian coast in a dhow.

When the dhows carry passengers they are packed on the main deck like cattle. Living conditions are not too bad without passengers, but with a load of passengers, conditions immediately become foul. Ordinarily the bilge on a dhow is beyond description, but sanitary conditions become unimaginable with a load of passengers who are so packed in that they cannot all hang over the rail in rough weather. Villiers[32] tells of seeing a small 60-foot *bhum* from Oman sailing down the coast of Africa with about two hundred Omani passengers; it was estimated by the Arabs on Villiers' ship that ten of these would die before reaching Zanzibar.
[764] Whenever there is a death aboard, the Arabs conduct a hasty sea burial; deaths are never reported to port authorities by the Arabs, for fear of not being cleared.

805 Although the Arab aboard ship has little concept of time as far as days go, he divides the day into four periods separated by the announcement
788 of the five daily prayers in which all good Moslems religiously indulge. Prayer time is announced by the *muezzin* (prayer caller), who may be any one of the crew or officers. The *muezzin* simply announces the time of prayer, and bears no similarity to a priest or minister, for the Moslems have none of these; their religion is voluntary. The first sound to fall on Arab ears every day is the raucous call of the *muezzin* perched on some

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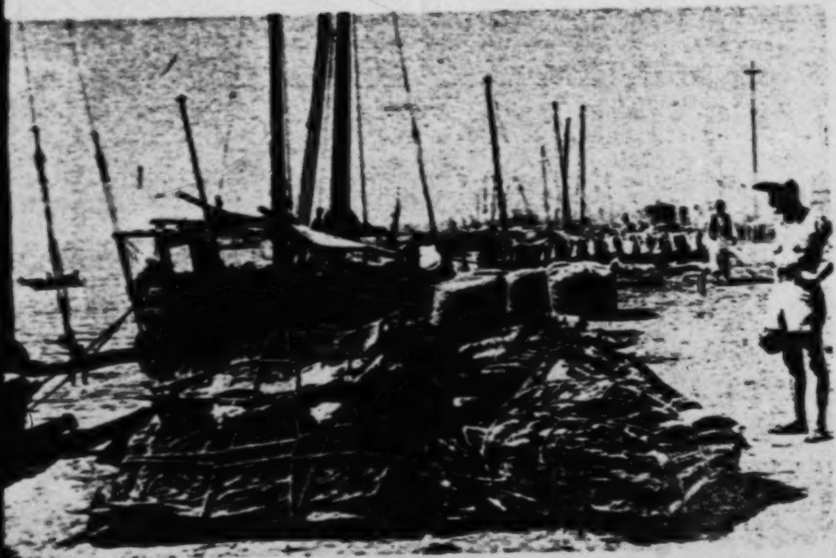
[31] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 314.

[32] A. Villiers, *SS*, p. 124.

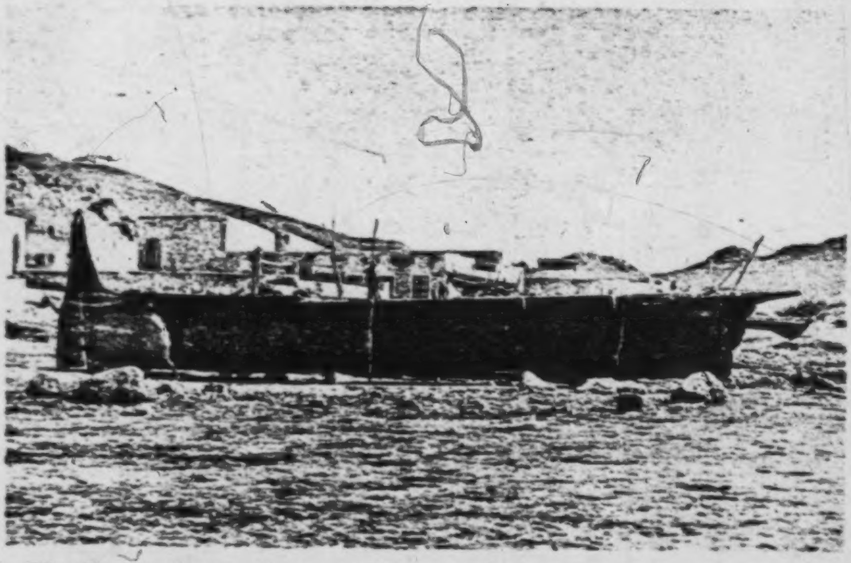


Manama wharf on Bahrein Island, through which comes the entrepôt trade destined mostly for transshipment to Arabia. Shown in the foreground are hides, and in the background bales of cotton and earthenware water jugs

Persian carpets and brass-bound chests are usually carried by the captain as a private venture. Here a Persian captain is attempting to sell some chests to an English woman in Aden

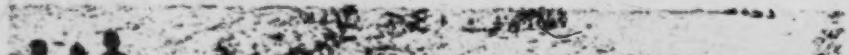
[facing p. 190A]

501



The Omani who coast down to Africa and fish along the way haul their *bedans* out periodically, lay the fish out to dry, and oil the hulls; this one is at Mukalla

251



Tuna fish drying in the sun at Mukalla. The Omani carry large quantities of dried fish down the South Arabian and East African coasts, coasting down on one monsoon and back on the other

[FACING P. 190B]

point of vantage. Before every prayer the Arabs first perform the required 788
Moslem ablutions of washing their hands, face, feet, etc., in sea
water; then they go through the prayer ritual facing towards Mecca with
their headcloth spread in front of them as a prayer rug. It is for determining
the direction of Mecca that the compass on a large dhow is often most
used! The first prayer is the dawn prayer said in the first greying light of
dawn; the morning prayer takes place when the sun is close to the meridian;
the afternoon prayer is called when the shadows begin to lengthen;
the evening prayer is said shortly after the sun sets; finally, the night prayer
ends the day several hours after sunset. The above applies to Moslem
Persians and Indians as well as to the Arabs; obviously it does not apply
to Hindus or sailors of other religions.

Eating is intimately related to Islamic religion for Arabs and other 261
Moslem sailors, as their three meals come directly after the dawn, the 262
morning, and the evening prayers. In the month of Ramadhan all faithful
Moslems neither drink nor eat during the daylight hours; however, 264
during Ramadhan all activities on land and on sea usually hit a low ebb. 785
In other months breakfast consists for the Arabs of little more than a
piece of unleavened bread with some sweet tea or water with which to
wash it down. Lunch has more to offer, consisting of a mess of boiled rice
with a flavoring of *ghee* (clarified butter) and curried or baked fish (if the
ship has any fish aboard). The main portion of the meal is rice, which is
served on a huge tray, or often simply on a palm leaf mat. The crew
gathers around several of these trays or mats and makes quick work of
the food, using no implements other than their right hand. They take a
little fish (or meat if they are that fortunate), ball a small handful of rice
around it and toss the ball deftly into their mouth, usually without losing
a crumb. Nothing is ever wasted, as someone always scavenges the
last morsel. Supper is essentially the same as lunch.

Often a feast is in order in port; this always calls for the slaughter of a 527
sheep (or goat), a number of which are always kept alive on board. The 252
sheep is usually slaughtered at dawn and is virtually dragged from its
skin into a large iron pot, where it is boiled in water. The sheep or goat
is the *pièce de résistance* and is served whole on a huge tray of rice. For a
feast, a curry flavoring or raisins are often mixed with the rice. Various
delicacies from the sheep, such as the heart, liver, lungs, and kidneys, are
cooked separately and served in side dishes. As the feast starts, the sheep 264
is methodically torn apart limb from limb and fiber by fiber. The meat
is always eaten in the same manner: rice is balled around small bits of
meat and tossed deftly into one's mouth with the right hand. In pulling

264 apart the sheep only the right hand may be used, as the Moslem left hand is reserved for less sanitary duties.

Towards the last of the feast, the host seizes the head, rips out the tongue, gouges out the eyes, removes the brain by smashing the head on the floor, and tosses these delicacies on the plates of the guests of honor. To one unaccustomed to the ways of the East, such a scene might look primitive and barbaric, and might remind one of a pack of animals crouched around their prey. It is true that the Arab meal lacks the decorum of a Western table and one needs more than a finger bowl when finished, but once one is accustomed to the Arab way of life, an Arab feast is most satisfying! Before and after the feast one is served the ubiquitous too-bitter Arab coffee and too-sweet tea. Often during the regular day, coffee and tea break the long hours between meals.

Villiers made a very careful survey of the food consumed for 270 days on a Kuwait *bhum* by the thirty men aboard. The total cost was 1502 rupees, which was an average of about 5.5 American cents per man per day (at a rate of exchange of $0.30 per rupee). Villiers' summary of the food consumption is as follows:[33]

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Commodity	*Cost per Unit*	*Number of Units*	*Total Weight*[34]	*Total Cost Rupees*
Dates	3 rupees/package	40	3360 lbs.	120
Rice	8-10 rs/bag	53	8900	500
Flour	6 rs/bag	12	1800	72
Sugar	12 rs/bag	7	1570	84
Dried fish			500	40
Dhall (Indian Corn)	15-16 rs/bag	6	1010	90
Salt	2 rs/bag	3	670	6
Tea			110	50
Coffee			220	30
Ghee (clarified butter)	10-20 rs/tin	9	360	120
Saleet (oil)			400	50
Pickled stuffs			100	50
Chilis			80	10
Onions			1600	50
Potatoes			480	30
Cloves (for coffee)			40	5
Ginger (for coffee)			100	5
Tomato essence			40	15
Canned milk			150	20
Sesame seeds (for bread)			30	5
Lady-fingers and peppers				5

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[33] Ibid., p. 427.

[34] These weights were estimated by this author, using the average weight of the units, i.e., packages (of dates), bags (which vary for every commodity), tins, etc., that were in common use in Aden in 1950.

White radishes	100	5	262
Lemons	40	5	
Other fresh vegetables	400	15	
10 live sheep	1100	40	
15 live sheep and goats	1500	80	
	Total Rs.	1502	

It should be noted that rice constitutes one-third of the cost. The other great staple at sea—fish—is not listed accurately, as most of it is caught fresh; probably between two thousand and three thousand pounds of fresh fish was eaten. It should also be noted that no charge occurs for water. The dhow will take a tank of bad water rather than pay for it.

The Arab dhow, regardless of its size, always has a fish-line overboard, 226 and it is not uncommon to see half a dozen lines overboard. I have caught many fish myself trailing a line from a dhow in the Persian Gulf. Villiers[88] states that fishing off the whole African coast is particularly good and that it is not uncommon for the many lines trailed from a Kuwait *bhum* to net twenty to thirty large fish a day. The fish not eaten are cleaned by [251] splitting, are pounded in salt, and then hung in the sun to dry; the sailors never bother to scale the fish.

The galley on an Arab dhow is simply a spot on the deck. The stove 252 consists simply of an open-sided box with some sand and cooking stones 501 on the bottom (see Plate 21—top left). The larger the dhow the larger the fire-box. The cook cooks everything here with wood fires of palm wood, brush, or driftwood.

On dhows of South Arabia and the Gulf of Aden ports there is also a bread oven. I have never seen these on dhows from the Persian Gulf or Gulf of Oman. The oven consists of a wide-mouthed pot perhaps fifteen or eighteen inches in diameter; this pot is put inside a barrel about two and one-half or three feet in diameter and the space around the pot is filled with sand (see Plate 21—top right). The barrel is firmly lashed together and then is usually securely lashed to the deck. To bake bread, the cook builds a fire in the bottom of the pot and allows it to burn down to the coals. Then he takes a flat piece of dough like a large pancake and pastes this on the inside of the pot; the heat in the walls of the pot and the coals bake the bread. This is the Arab *khubuz,* one of the staples of 262 the Arab at sea as well as on land.

VI

It is difficult for one totally unfamiliar with the Arab East to under- 426 stand the economic system of the Arabs. The tenets of Islam prevent any

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[88] A. Villiers, *SS,* p. 130.

426 banking system, interest, usury, or insurance. The economy of the Arabs is built on a tremendous pyramid of debt which has the lowly sailor, fisherman, farmer, and coolie on the base and a sheikh on top; this system, which may well be called the 'debt system,' operates efficiently and effectively, but has been notoriously overworked in the case of pearling activities in the Persian Gulf.

426 At the start, a merchant will finance a *nakhoda* for building a deepwater
465 dhow.[56] Thus the *nakhoda* is the *nominal* owner of the dhow, but he is indebted to the merchant. If the *nakhoda* had enough money to buy a dhow himself, he would finance someone else and become a merchant himself. This arrangement suits the merchants, for if the ship goes down, the *nakhoda* (or his family) must pay back the value of the cargo and the cost of the dhow as well. Thus the merchant has an 'insurance' on his investment. A merchant may have a dozen *nakhodas* so indebted to him.

The *nakhoda*, on the other hand, has all his sailors and crew indebted to him. He never pays them any regular wages, but gives them advances of food and money when they need it. Thus, as we saw above, the sailors have to make the sails and rig a new ship if they are to sail it. Only when the voyage has terminated six months or a year later, and the ship has been beached in the home port, do the sailors get their share of the earnings of the voyage. But by this time many of them have no share coming, as the *nakhoda* usually has advanced them more than their share amounts to, so he must give them another advance; this is to the *nakhoda's* liking, as he then has the sailors indebted to him. Once a sailor owes a *nakhoda* money, the sailor cannot ship with another *nakhoda* until the debt is paid. The sailors pay for only half of what they eat, for when it comes to the final accounting (if such a civilized term can be applied to the figuring), the total food cost is subtracted from the gross earnings.

The *nakhoda* receives about four or five times the sailors' share, while the mate receives about half as much as the *nakhoda*; some members of the crew receive a little more than the common sailors. The shares received by the twenty-seven men eligible for shares on the Kuwait *bhum* on which Villiers[57] sailed in 1939 are as follows:

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	5	1	5
Muʿallim (mate)	3	1	3
Quartermaster	1½	3	4½

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[56] Not everyone can become a *nakhoda*, for the *nakhoda* must come from a family which can pay the debt if the *nakhoda* should be unable to.

[57] A. Villiers, *SS*, p. 425.

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465

Serang (boatswain)	1½	1	1½
Serang's mate	1¼	1	1¼
Cook	1½	1	1½
Steward (storekeeper)	1¼	1	1¼
Sailors	1	18	18
Total shares			36
Nakhoda's extra 4 and mate's extra 2 shares			6
Net shares for crew's half of dhow's earnings			30

The *nakhoda's* four and the mate's two extra shares are taken from the ship's part of the earnings. On the voyage that Villiers made, the ship grossed 9,600 rupees and spent some 1,500 rupees on foodstuffs; this gave a net earning of 8,100 rupees. Half of this was considered the crew's share for the voyage, so the thirty shares were worth 135 rupees each (after the *nakhoda's* and the mate's extra six shares were deducted from the total shares). The ship's expenses and upkeep, as well as the *nakhoda's* and the mate's extra shares, came from the dhow's earnings; the balance went to the merchant financing the vessel. If we assume that the yearly upkeep of the dhow was 1,000 rupees (which it never would be, as the crew does all the work on their share of the earnings), the owner's share on his investment of 12,500 rupees (the total original cost of the completed dhow) was 2,240 rupees, or approximately eighteen per cent. However, this is probably closer to twenty per cent, as the yearly upkeep probably did not run over 500 rupees. This would not hold up under strict accounting, as no depreciation has been charged off. Also no insurance on hull or cargo was carried as there are few if any Arab insurance firms. However, when Arab craft make return trips from India they usually insure the cargo with an Indian firm.

Villiers[88] estimates that the sailors might have netted twenty rupees extra in their own trading, that the mate might have made several hundred, while the *nakhoda* might have made a thousand rupees in his deals—mostly from Persian rugs and carved chests. Thus the owner received a twenty per cent return on his investment for the year, while the sailors received about 150 rupees ($45.00) then for a year's work. That seems rather unbalanced, does it not?

I have found the same general system of shares applying to pearling and fishing activities as well as to mariners in the Persian Gulf, the Red Sea, and along the coasts of South Arabia. In general, however, it is more

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[88] Ibid., p. 426.

426 clean-cut in Villiers' case, as all the shares of the *nakhoda* and the mate
465 come from the crew's half of the net earnings. On the 240-ton *sambuk El Wafi*, which I boarded in Aden in 1950, the shares were as follows:[59]

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	4	1	4
Serang (mate)	2	1	2
Sukhani (quartermaster or helmsman)	1½	3	4½
Muqaddam (boatswain)	1¼	1	1¼
Katib (clerk)	1½	1	1½
Wakil (steward)	1¼	1	1¼
Bahri or *mallah* (sailors)	1	33	33
Total shares			47½

In India some crews are paid on a salary basis, but many others work on a share basis. However, in India the owner takes one-third of whatever the ship earns. Then the craft's expenses while she was at sea and the supplies for the crew are deducted from the remaining two-thirds; the remainder is then divided among the captain and crew according to shares.[60] By dividing the profits in this manner the Indian owner gets about a quarter less than the Arab, while the Indian crew gets about ten per cent more.

471 The largest importer and exporter in Aden, and probably the whole
426 Gulf of Aden for that matter, is A. Besse and Company, operated by a
465 shrewd Frenchman, Mr. Antone Besse. Among Besse's various holdings in the Middle East are twelve dhows, all registered in Aden. The *El Wafi* was one of the twelve *sambuks* owned by A. Besse, and operated in the Gulf of Aden and the lower Red Sea. On the average these dhows made four trips a month. The *nakhoda* was given advances, which he in turn gave to the crew, before each trip. After four trips the gross return for

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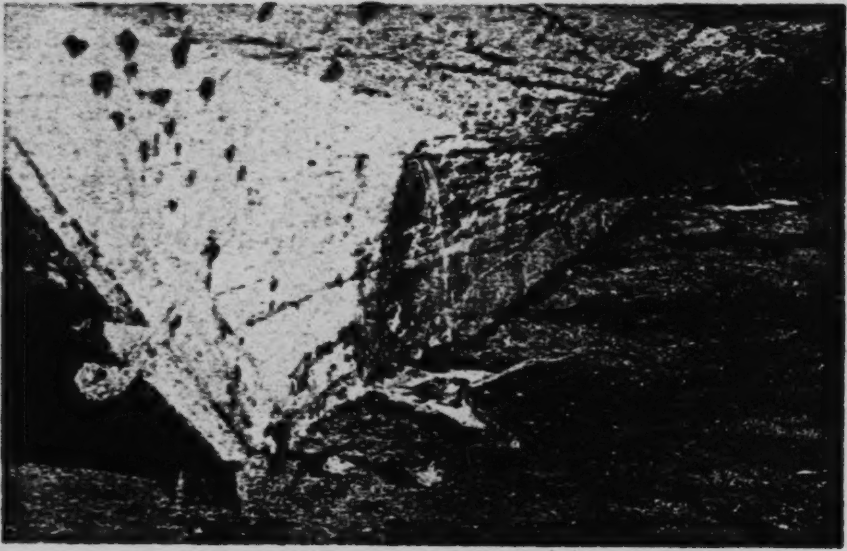
505 104 114 [59] It will be noted that the Arabic names in Villiers' list of the members of the crew on a Kuwait *bhum* and in my list of the members of the crew of an Aden *sambuk* are not the same; however, this does not mean that either is necessarily wrong. The Arabic names on my list were checked from three independent sources in Aden, and my informants in Aden recognized Villiers' *muᶜallim* as the word the Kuwaiti used for 'mate.' Villiers indicated on his list 'quartermaster' but did not give the Arabic for the word. The Arabic word that I found in use in Aden for this member of the crew was *sukhani*, which comes from *sukkan*, the Arabic for 'rudder.' Thus it would seem that the more proper translation of the word is 'rudder-man' or 'helmsman,' although his position on the dhow is really that of 'quartermaster.' The word *muqaddam* is the word commonly used on land to refer to a 'headman' who is the leader of any other group of working-men. However, on a dhow the *muqaddam* is the man who superintends the letting go and the weighing of the anchor, so the translation of the word when applied to seafaring men is properly 'boatswain.' The important fact evident from the two lists is that there is always a consistency in the top officers of a dhow—there are a captain, a mate, three quartermasters (or helmsmen), and a boatswain, irrespective of the Arabic name by which they are known.

[60] K. B. Vaidya, op. cit., p. 41.

501



The dhow is usually not a very seaworthy craft. The photograph shows bilge water leaking through weak seams in the bottom of a large dhow drawn up on the beach

505

The crew usually does all the stevedoring. The photograph shows the crew of an Aden dhow loading the undecked craft for a trip to Djibouti. The cargo remains unprotected from the weather

Facing P. 196 (A)

PLATE 20

396

The crew that is to sail a new dhow must rig the ship and make the sails first. The photograph shows a set of sails being made at Aden

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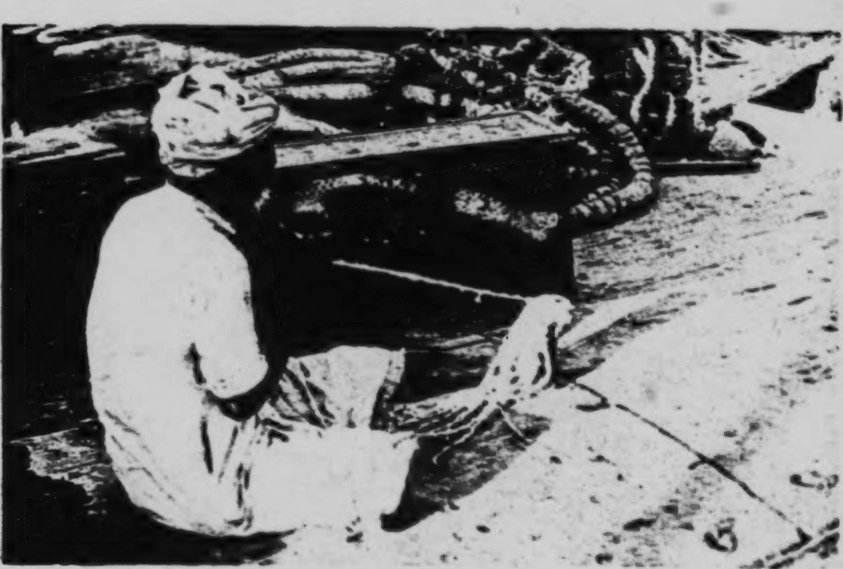
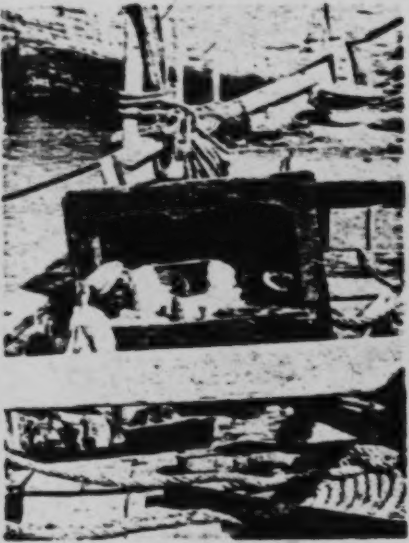
283



Rope making is one of the odd jobs that crew members perform. Here an old sailor makes some rope using his toes as well as his hands

Facing P.196 (B)

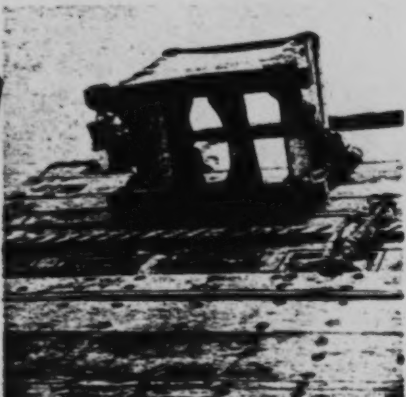
PLATE 2



The galley on a dhow is on deck; the stove is an open-sided box

An oven on a dhow (to the right of the water drum), made of a wide mouth pot put inside a barrel of sand

The toilet on a dhow is simply an open privy hung overboard



The toilet on a large dhow as seen from below

Facing p. 196(C)

the cargo the dhow had hauled was figured and the cost of the food consumed by the officers and crew was deducted, giving the net earning of the dhow. One-half belonged to the crew and was divided into forty-seven and one-half shares as shown above. The other half belonged to the owner, and represented his return on his investment; the owner had to maintain the dhows from his half of the earnings. As we saw above in the case of the figures presented by Villiers, the owner has little to deduct from his share of the ship's earnings, so his return on his investment is considerable. It is little wonder that Mr. A. Besse was recently able to give Oxford University a contribution of £2,000,000! 421 465 471

Over one hundred years ago, the French Admiral F. E. Paris spent considerable time in the waters around Muscat and wondered how Arab ships could at that time compete with the more efficient European sailing ships. Paris summed up his conclusions as follows: 477

> ... les Arabs qui les montent habitués au retour périodique des moussons, n'exécutent, en general, qu'un voyage par an ... [ils] entendent bien le commerce; malgré cela, ils sont rarement employés par les Europeans ... et, comme ils ne prennent que de très-faibles cargaisons, ce n'est que grâce à l'extrême économie des Arabs qu'ils peuvent servir pour le commerce.[61]

Only a decade ago, one hundred years after Paris, men of other lands were still wondering how an Arab sailing fleet could possibly survive in the present era of oil and steam; to satisfy his curiosity Alan Villiers dedicated a year of his life to sailing with the Arabs in their dhows. Villiers has summed up the reasons for the survival of the dhow fleet as follows:

> One reason—perhaps the chief—why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and his vessel pays practically no port dues.[62]

While in Aden in 1950, the writer investigated the intriguing problem of dhow economics, as applied to the coastal craft operating around 505

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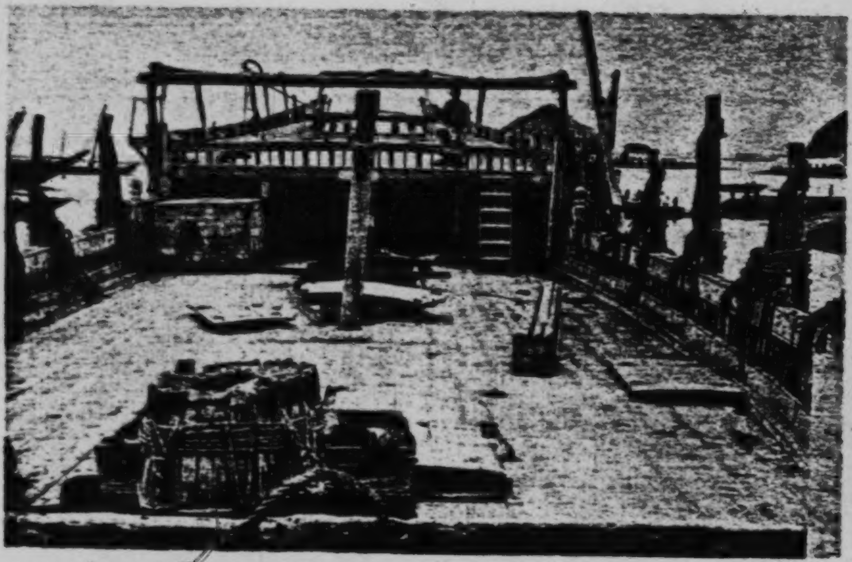
[61] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra—Europeéns* (Paris, Bertrand, [1841]), p. 9. '... the Arabs who man them, accustomed to the periodic reversal of the monsoons, carry out, in general only one voyage a year ... they understand commerce well; in spite of that, they are rarely employed by Europeans ... and, as they carry only very poor cargoes, it is only because of the extreme economy of the Arabs that they can be of use for commerce.' 113

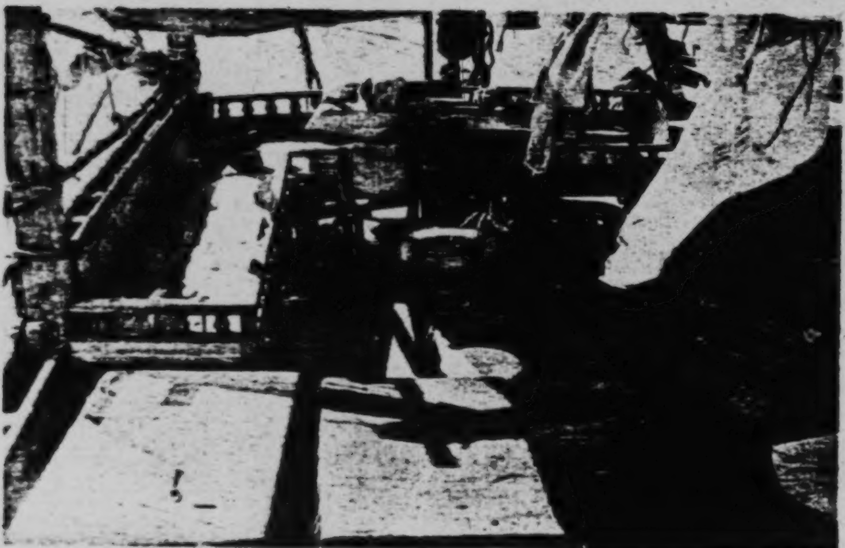
[62] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 400-401.

PLATE 22

501



There is usually a cabin under the poop, formed by the space between the poop deck and the extension of the main deck. Note the man on the poop for an estimate of size



The poop is usually cluttered up with sailors' chests, filled with cheap goods for trade. Note the binnacle, the only navigation instrument on the dhow, a large *baghla*

[Facing p. 197]

505 Aden. The twelve dhows mentioned above and owned by Besse have a gross tonnage ranging from 53 to 446, with an average gross tonnage of 181 and an average capacity of 150 tons. Six of the larger dhows have auxiliary diesel engines but the other six have none. Although engines might seem to conflict with the fatalistic attitude of the Arab sailor, the Arabs manage their engines very well. A summary which Mr. A. Besse furnished the author of the gross and cargo tonnage of his twelve dhows, all of the *sambuk* class, follows:[43]

Name	*Gross Tonnage*	*Capacity-Tons*
*Dawood**	446	400
*Galood**	330	300
*Wafi**	240	190
*Lateef**	225	200
Nufeed	189	180
Masheet	170	140
*Essid**	136	90
Nuthel	118	95
*Henkhles**	112	70
Kaid	75	70
Karn	73	70
Dharif	53	50
Average	181	150

* Indicates auxiliary diesel engine installed.

A. Besse sends these dhows to Mukalla (see Plate 23—bottom) and Shihr on the Hadhramaut coast; to Hodeida, Luhaiya, and Maidi in Yemen; to Qizan in Saudi Arabia; to Kamaran Island; to Massaua and Assab in Eritrea; to Djibouti in French Somaliland; to Zeila and Berbera in British Somaliland; and to Bender Cassim in Italian Somaliland. The most distant of these ports (Massaua) is about 450 miles away from Aden, while the nearest (Djibouti) is only 150 miles from Aden. The dhows operating in this 450-mile range from Aden average about four trips a month, and carry merchandise destined mainly for branches of the Besse empire, but also carry any other cargo they can obtain.

The Besse dhows have been known to make occasional trips as far away as Port Sudan and Jidda in the Red Sea (about 800 miles from Aden) and

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[43] While the two sets of figures are not consistent in relation to each other, they do give an excellent general picture of the relative tonnages. In Besse's office on the Maala waterfront in Aden there was a large blackboard with the dhow names painted down the left-hand side and space to the right for information about their cargoes, port of destination, ETA's, etc. In the middle of the dhow list, a name had been scratched from the list. This represented a 150-ton dhow that had gone down in the Gulf of Aden in a storm; it had sailed out of Aden and has never been seen or heard from since. The dhow manager explained that the dhow had not been made in Aden, but in Africa, and was very weak; as an actual fact the other dhows belonging to A. Besse have a reputation for being the strongest-built dhows in the local waters.

Mogadiscio in Italian Somaliland (over 1,200 miles from Aden); to various Indian ports, which are between 2,000 miles (Karachi) and 2,500 miles (Bombay) from Aden, Besse's dhows have been known to have made an occasional trip.

The point of all this is that Besse has found it profitable to operate his dhows within a 450-mile radius of Aden, but no farther (see Figure 4).

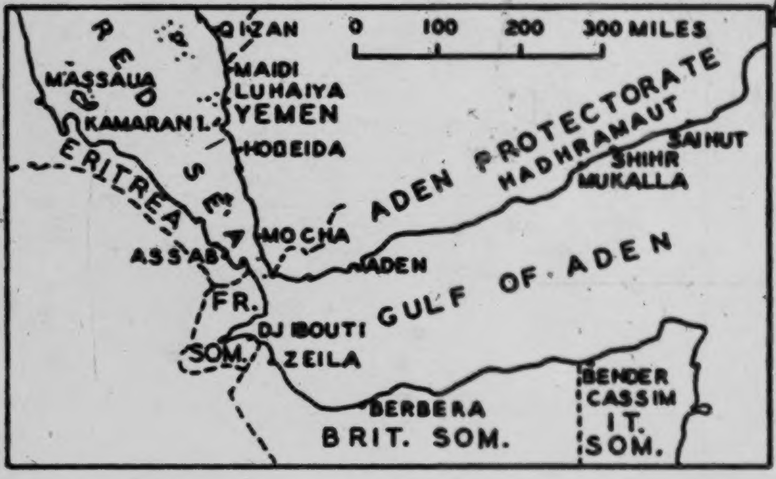
RED SEA
QIZAN
0 100 200 300 MILES
MASSAUA
MAIDI
LUHAIYA
YEMEN
KAMARAN I.
HODEIDA
ERITREA
ADEN PROTECTORATE
HADHRAMAUT
SAIHUT
SHIHR
MUKALLA
MOCHA
ASSAB
ADEN
GULF OF ADEN
FR.
SOM.
DJIBOUTI
ZEILA
BERBERA
BRIT. SOM.
BENDER CASSIM
IT. SOM.

Fig. 4. Map of the southern Red Sea-Gulf of Aden area

The same is true of dhows from other ports in the area, for one finds Aden full of dhows from the same ports to which Besse sends his dhows, but few from ports farther away. Thus it seems that dhows can operate economically to and from Aden within a 450-mile radius. However, more cargo goes out of Aden by dhow than comes in by dhow, and many of the dhows from Yemen and the Somalilands come to Aden empty in the chance of picking up cargoes (see Plate 23—top). It should also be noted that most of Besse's dhows return to Aden empty after delivering their cargo in the 450-mile radius. The above does not apply to the deepwater ships coasting down from Arabia to Africa, as these ships make only one trip a year. The above case for Aden applies only to coasters which make a number of trips a year, always returning to their home port (in Aden or the 450-mile radius).

Vaidya[64] has estimated that in 1944 there were about 5,300 sailing

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[64] K. B. Vaidya, op. cit., p. 17.

505 craft on the west coast of India engaged in coastal trade over the one thousand-mile coastline. These vessels averaged only about forty tons and carried on the average eight-man crews. It is extremely interesting to note that Vaidya[69] concluded that these vessels never made voyages to ports over four hundred to five hundred miles away, always staying within a five hundred-mile radius of their home ports. The only vessels that made longer trips were the larger craft from the Gulf of Cutch and the Sind coast, these craft carrying Indian trade to Africa, Arabia, and the Persian Gulf. Thus in India the same economic balance that is found in the Gulf of Aden governs the coastal trade. These coastal craft would rather return home in ballast than travel out of their arbitrary 'zone' for a cargo.

479 Admiral Paris thought that the dhows could exist in the face of more
465 efficient European sailing ships only because of the extreme economy of the Arabs. Villiers thought that the main reason the deepwater dhow
505 could still exist in large numbers in the present day of steam was in the main because of the date-storehousing ability of the dhow, which did not tend to flood the market with dates. However, as we have seen above, the 1949 crop of dates entered Aden under steam, rather than on Kuwait dhows.

No, the answer to the question is of a more fundamental nature than either Paris' or Villiers' reason. It is this writer's opinion that the main and only reason why deepwater dhows can survive in this day and age is the system of sailors' wages—the 'debt system.' The Arab capitalists' philosophy is 'Get a man in debt and then never pay him enough to get out of debt.' Certainly this is true about the deepwater Arab craft that sail from the Persian Gulf and the Gulf of Oman to Africa; the crews are paid once a year, so that by the time they do receive their pay the advances made to them usually consume most of their wage. This would tend to be less true if the sailors were paid more frequently. It is interesting to note that A. Besse operates his coastal dhows under the debt system and shares, paying off only once a month and giving out liberal advances in between to keep the sailors in debt.

However, this is not the most important factor keeping the large number of coastal craft operating in areas like the Persian Gulf, the Gulf of Aden, the Red Sea, and the west coast of India. These coastal craft provide a very valuable service by moving cargo in small amounts to ports not usually visited by steamers; steamers find it uneconomical to make short hauls of small cargoes. However, what may be considered a small cargo for a steamer may fill several dhows. In many instances these coastal craft furnish the only transportation to many small off-the-trac ports.

[69] Ibid., p. 103.

craft furnish the only transportation to many small off-the-track ports. In addition to this it must be remembered that the dhow (or other native 502 coastal craft) can navigate shallow harbors and creeks, while a steamer could not get closer than several miles. Thus there will always be a place for these short range coasters. However, the future of the deepwater dhow is another question.

The debt system has worked for centuries to the economic advantage 426 of those financing the dhows, and to the economic disadvantage of those 465 working on them. It has been impossible for the sailors to break away, as 505 they can never work for another *nakhoda* when in debt to one. There is only one way to break away, and that is to pay the debt. Becoming a farmer or a fisherman does not help, as they usually operate under the debt system also.

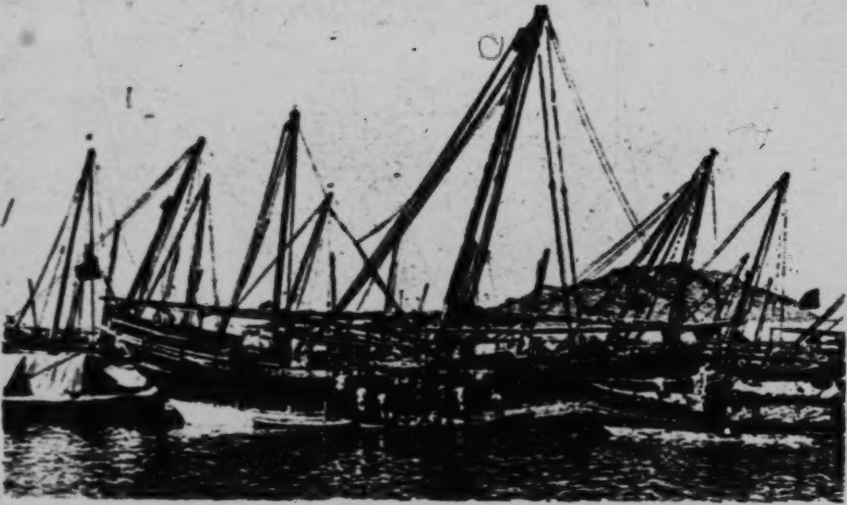
On its face in such a financial set-up the merchant has everything to gain and absolutely nothing to lose. In the case above (where the shares, and thus the sailors' wage, were worth about 150 rupees and the merchant made eighteen per cent on his investment on the dhow), if the dhow had made only one-half of what it had, the merchant would still have received about ten per cent on his investment, but the poor sailors would have received only 75 rupees ($22.50) as a year's wage. Thus the dhow can compete against steam only at a sacrifice of the unfortunate economic slaves sailing the dhow. The dhow sailors do all the stevedoring, maintenance work, and sailing for their lowly share of the dhow's earnings; if the sailors received a decent wage (even if only on Eastern standards), the deepwater dhow could not stay afloat as a cargo vessel. Coastal craft operating short distances do pay higher wages on the average than the deepwatermen.

However, the advent of the large oil companies in the Middle East has provided a means wherein the sailors can escape from the bonds of economic slavery. By making jobs which pay good money (on Eastern standards) dhow sailors are able to free themselves of their debts and become free men. We have seen above that the oil companies in Saudi Arabia and on Bahrein Island have decreased the number of boats the pearl fisheries can send out, as they cannot get divers to work for the wage they can offer. Kuwait has long been able to keep a large deepwater cargo fleet of *bhums* on the waters around the Indian Ocean because Kuwait had a surplus of cheap labor—there was little else to do in Kuwait besides work in marine activities. Now that the Kuwait Oil Company has made jobs available to the local Arabs, the cheap labor market is gone for the Kuwait *nakhodas*. Thus as the standard of living is increased and cheap labor

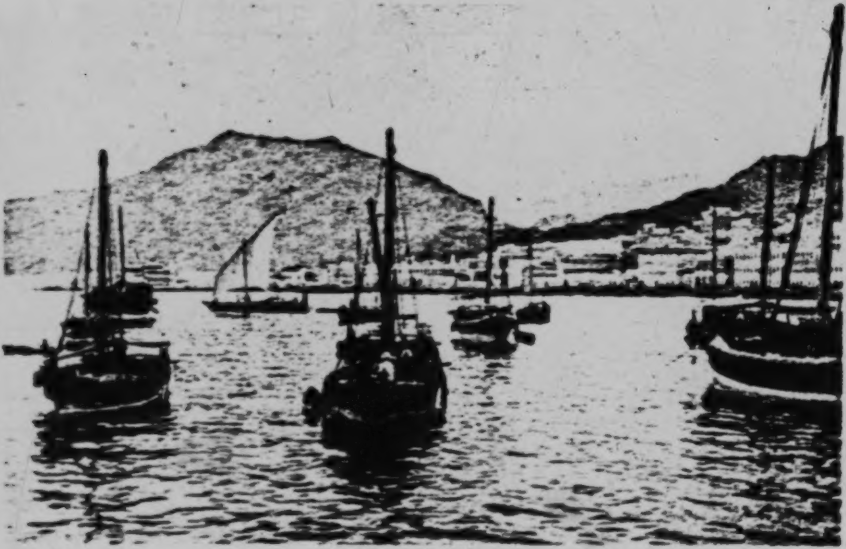
426 becomes no longer available, the deepwater dhow is doomed. The dhow
465 cannot operate in competition with steam if it has to pay the sailors respectable
505 wages; that is, as long as the merchants demand one-half of the
dhow earnings.

511 While traffic in human cargo is virtually a thing of the past, the dhows that coast along the Arabian, African, and Indian shores still have slave crews on them. Although not owned bodily, the crews are bound economically to their masters, the *nakhodas*, while the *nakhodas* themselves are economic slaves of the merchants. But, while the crews get little actual compensation when the pay-off finally comes, they are happy and well-fed and have known nothing else. Allah is compassionate, and there is always a Paradise waiting for their poor souls!

501



Dhows in the native anchorage at Maala in Aden. The large *baghla* in the foreground is discharging its date cargo with its longboat, the crew acting as stevedores



Dhows in the harbor at Mukalla at dusk. A *bedan* from Oman (with its sail up) is just slipping out of the harbor on its way down to Africa

Facing p. 202

4: Bowen

MK2 Maritime Arabs MK2

181

/For data concerning the Arab dhow sailor and his view of life see full text in category 116. /

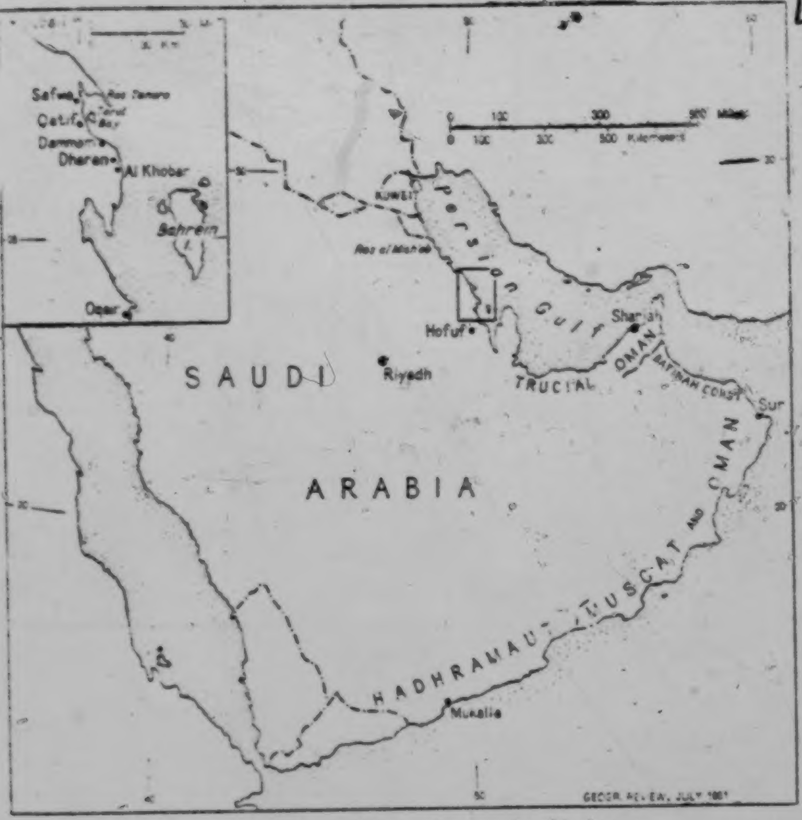

Safwa
Ras Tanura
Qatif
Tarut Bay
Dammam
Dharan
Al Khobar
Bahrein I.
Oqair
0 100 300 500 Miles
0 100 300 500 Kilometers
KUWEIT
Persian Gulf
Ras al Mishab
Hofuf
Riyadh
SAUDI ARABIA
TRUCIAL OMAN
BATINAH COAST
Sharjah
Sur
MUSCAT AND OMAN
HADHRAMAUT
Mukalla
GEOGR. REVIEW, JULY 1951

Fig. 1—Location map. Inset shows places mentioned in the text.

with both hands and his teeth. Whe: spots a school of fish, he flings the 226
net into the air with one arm (much like a man sowing seed) and a snap of his head. The net opens out flat and drops on the water; the weights carry the outside to the bottom faster than the center. The fisherman then picks up the net by the center, and any fish under it immediately swim toward the edge and are trapped in the pocket. He keeps pulling the center through one hand and folding it up, and when he has finally gathered in the whole net, he carefully removes the fish flopping around in the pocket, puts them in a palm-leaf basket, and starts all over again.

The Arabs also use wire and palm-leaf basket fishtraps (Fig. 4). These 226
re oval-shaped, from two to five feet long, with a cone-shaped entrance 262
on each end through which the fish cannot squeeze out. The traps are usually baited with cuttlefish, forbidden to the Arabs by a strict interpretation of

estimate of the number of boats operating in 1946 would be as 228
follows: 464

Bahrein	150
Kuwait	100
Darin, Qatif, Jubail	30
Trucial coast, Qatar, and Persian ports	250
	530

178

Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the 228
coincidence of the pearling season with the date harvest. Starting 245
about June there is a migration of men northward from the
Batinah Coast to the Trucial Coast; these men work the pearl 221
fisheries. Some go north in caravans, others sail up in their 462
bedens and other dhows. Opposed to the flood of men who make 464
this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home.

Bertram Thomas states that a considerable percentage of the 228
army of men annually migrating northward to the Trucial Coast 567
is composed of slaves.[17] These Batinah contingents are usually 464
accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.[18]

Pearl fishing is a seasonal occupation, as the divers must wait 228
for warm summer water before starting to dive. Probably few 464
people realize there is a winter in the Persian Gulf, and that 132
the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

[18] Ibid., p. 143

228 464 132 for the minimum winter air temperature to be in the middle forties; during this period the sea water temperature in shallow water will be in the low sixties.

228 147 464 132 Pearl diving requires that the diver's body be almost continually in the water. From experience the Arabs have found that the surface water temperature has to be about 85° F. before continued deep-water diving is feasible; thus the main pearling season (*al-ghaws al-kabir,* or "great diving") averages four months — from June into the first week of October. During this time the maximum surface water temperature exceeds 90° F. (in August) off Hasa. O'Shea states that on the Trucial Coast *al-ghaws al-kabir* often lasts until late October, the water apparently remaining warmer longer there than further north.[19] In addition to *al-ghaws al-kabir,* there are two other seasons: the "cold diving" season (*al-ghaws al-barid*) running from April to May, and the *mujannah,* running from October to March. The smaller boats run out in the shallower (warmer) waters for *al-ghaws al-barid* and act as a barometer for the season, while the *mujannah* is worked by waders who work along the shore when the tide is out, many equipped with glass-bottom "look boxes."

527 228 For *al-ghaws al-kabir* the various fleets, whether from Kuwait, Bahrein, or the Trucial Coast, leave port en masse with flags flying, to the beating of drums and Arab chants. The few boats from the smaller ports slip out without fanfare. It is a stirring sight to see these fleets of dhows maneuver with their sweeps and then set forth under huge spreads of lateen sails, with their freshly oiled, burnt-brown hulls glistening across the aquamarine water, like some ancient Phoenician or Roman fleet.

228 502 An admiral represents the pearl fishing fleet of each port. It is the admiral's boat which leaves the port first, and the admiral's duty to determine when the water becomes too cold for continuous diving. It is considered improper (by the owners) for the *nakhoda* of any large vessel to leave the pearl banks before the admiral leaves.[20]

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[19] R. O'Shea, *op. cit.,* p. 137.

[20] The admiral of al-Khobar, Saudi Arabia, now works for the Arabian American Oil Company, for al-Khobar no longer sends vessels out to the pearl grounds.

wages, they are given cash advances and food during the winter and during 421
slack periods. They never seem able to pay off their debts to the dhow 415
owners.

Pearling

The most colorful marine industry of the Persian Gulf is pearling.[3] 228
Pearling is definitely a seasonal occupation, confined to the months when 132
[501]
464

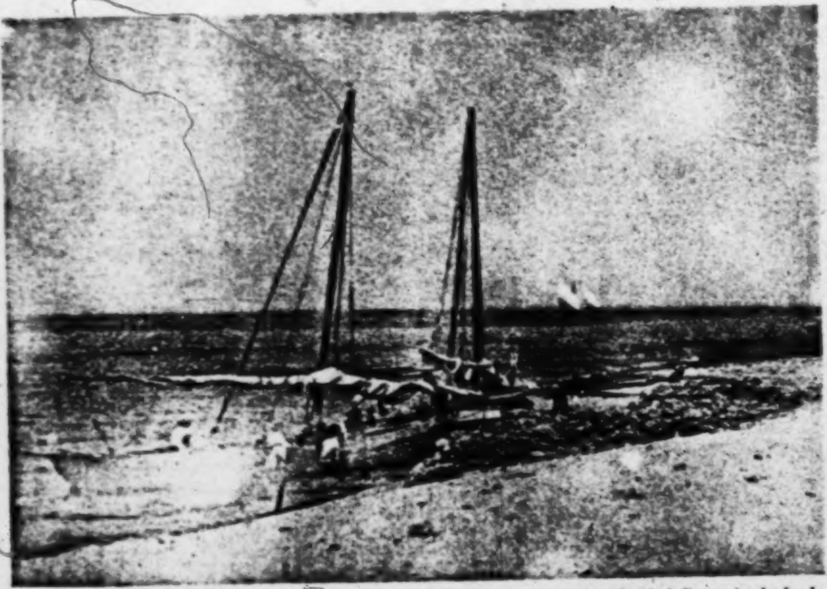

Fig. 15—Unloading hasa from jalbuts on the Ras Tanura peninsula. Two loaded dhows in the background are bringing in more.

the water is warm. On the Persian Gulf coast of Arabia the minimum winter air temperature is in the middle forties, the shallow-sea temperature in the low sixties. From long experience the Arabs have found that they can begin deepwater diving in June and continue until the first week in October. At the start and finish of the season the surface-water temperature is about 85°, but the deep-water temperature is considerably less; the maximum surface-water temperature may exceed 100° in August. Before this main season the *ghaus al-kabir* (great diving), there is a season of about two months, known as the *ghaus al-barid* (cold diving), when smaller boats work the shallower waters near their home ports; during the winter many men go out as "waders" at low tide to pick up what they can just below tide level.

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[3] See also R. LeB. Bowen, Jr.: The Pearl Fisheries of the Persian Gulf, *Middle East Journ.*, Vol. 5, 1951, pp. 161–180.

4: Bowen C-5 (1950) 1951 MK2 Maritime Arabs MK2

The Dhow Sailor[1]

BY RICHARD LeBARON BOWEN, JR.

I

487 SINCE time immemorial, cargo has been transported in sailing ships up and down the South Arabian and the East African coasts. As the medieval Sinbads and the ancients before them had done for countless centuries, so are the Arabs, Indians, and Persians today transporting cargo in sailing ships up and down these same shores. Today these sailors operate the last great fleet of deepwater sailing ships in the world, and because of the special circumstances, this fleet will probably sail on for many more centuries oblivious to the changing pace of life around it. Life for these modern sailors has changed little in the thousand years that have passed since the adventures of Sinbad the Sailor were recorded in *The Thousand and One Nights.*

502/132 114 The Arabs, Indians, and Persians are still able to sail their fleets of

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[1] Credit for this article belongs in large part to Mr. Frederick Hunt, who, after reading the author's 'Arab Dhows of Eastern Arabia' in THE AMERICAN NEPTUNE, wrote to the Editor and asked if a follow-up might be possible, 'telling something of actual life aboard a dhow, how the crew lives, watches they stand, living conditions, what they eat, their wages, etc.' Mr. Hunt's outline has been followed almost to the letter, with some additional material added to round out the study.

Shortly after the first draft of the article was finished, the writer was very fortunate to become a member of the American Foundation for the Study of Man Arabian Expedition, which conducted archaeological investigations in South Arabia during the winter of 1950. Almost a month spent at Aden and on the south coast of Arabia, enabled the writer to collect much valuable additional first-hand data on the life of the dhow sailor. The writer is indebted to Mr. Wendell Phillips, leader of the expedition, for his assistance in making this particular phase of the study possible. The writer is deeply grateful to Prof. W. F. Albright, vice-president of the American Foundation for the Study of Man, for his guidance and assistance in numerous details in the work. The writer is also indebted to Dr. Philip K. Hitti for valuable advice on certain points.

In doing any work on the subject of dhows, one must consult what Alan Villiers has written on the subject. By sailing with the Arabs on their dhows for almost a full year Mr. Villiers has obtained an intimate picture of the dhow that the casual observer will completely miss, or the serious worker may not be able to get, as the Arabs are rather suspicious of Europeans who investigate their activities too closely. The writer of this present article has drawn on Villiers' material to round out certain aspects of this article and to supply various facts and figures for which Villiers alone is the source. Most of such material has been taken from his entertaining book, *Sons of Sinbad* (New York: Charles Scribner's Sons, 1940), which in further reference will be abbreviated to A. Villiers, *SS.* 113

A description of the various types of dhows mentioned by their Arabic names in this article will be found in R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 87-132, and R. LeB. Bowen, Jr., *Arab Dhows of Eastern Arabia* (Rehoboth: Privately printed, 1949).

50 132 lateen-rigged dhows, which operate in the main without the aid of engines, partly because of the amazing predictability of the monsoon trade winds. For millenniums the northeast monsoon has started unfailingly about October and blown for six months, until the southwest monsoon set in about April and continued for the next six months. By a strange coincidence, these winds blow virtually parallel to the South Arabian and East African coasts. The Arabs ride their lateeners down from the north on one wind and return on the other. So convenient is the arrangement that it is probably one reason why the fair-weather lateen rig has persisted for so many centuries on the deepwater dhows in the waters of the Indian Ocean.

487 The *Periplus of the Erythraean Sea* (written by an anonymous Egyptian-Greek sailor in A.D. 50) tells us that the secret of the periodicity of the monsoons was discovered by Hippalus somewhat earlier and that 'from that time to the present day' ships bound for India from the Red Sea or South Arabia set a course 'straight out to sea.' It should be noted that Hippalus' find was a 'discovery' only from the Egyptian and the Greek point of view, as he discovered a secret that Indian and Arab mariners may have been carefully attempting to hide from Egyptian and Greek sailors. The original discovery of the fact that one could 'sail straight out to sea' and reach India from South Arabia, rather than by coasting, was more of a geographical than a meteorological discovery, for it was a realization of the southern projection of India (see Figure 1). Certainly no sailor in a sane mind would set a course 'straight out to sea' from South Arabia if he thought that the lands around the Erythraean Sea were oriented as shown in Figure 2.

The South Arabian kingdoms long maintained a monopoly of carrying the goods of the East via camel to the West. The Arabians collected the products of India and East Africa at the southern terminal of the famous incense route and sent these north, along with their own products, in huge camel caravans; the recipients in the north thought that all the products they received originated in South Arabia. Many writers have stated that the South Arabian kingdoms were doomed when the West discovered the secret of the periodicity of the monsoons. However, this writer feels that the monsoons had little to do with it; more important was the discovery that many of the coveted products thought to be indigenous to South Arabia actually originated in East Africa and India. After this fact was discovered, Greek and Roman shipping entered the Indian Ocean; in opening up trade with India and Africa they immediately started to slash the revenue of the South Arabians. It should be

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Estimate of the size of the dhow fleet sailing down the African coast is difficult, as the Arab goes to extremes to evade official statistics. The Mombasa port statistics for 1937 showed 1,427 dhows entering the port.[10] Not all the ships sailing to Zanzibar put into Mombasa, which is only a day's sail from Zanzibar. It must also be remembered that a certain percentage of the figure represents Mombasa dhows and dhows of neighboring ports on local coastal trading ventures. In Aden some two thousand dhows trade in and out of the port every year. However, a large proportion of this figure represents Adenese dhows and neighboring dhows that do most of the cargo carrying to the small ports in the southern Red Sea and the Gulf of Aden; only a small percentage of this figure represents dhows passing through Aden on their way to Africa. Thus it would seem that the total number of craft sailing down the East African coast may well range over a thousand, depending upon economic conditions. Only a small portion of these are Indian craft, for Vaidya[11] estimates that about seventy-five Indian vessels of from one hundred to two hundred tons are engaged in the traffic to Africa, mostly from the Gulf of Cutch.

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The Indian Ocean dhow trade is definitely a seasonal venture, as the ships usually depend on the monsoons to carry them on fair winds to their destinations. Vessels from the Persian Gulf and from India make one round trip a season when traveling south to East Africa. Arab and Persian ships start leaving the Persian Gulf in August and September with the first date crops and return in May and June, averaging eight to ten months for the round trip. Indian ships making the Africa run leave in November and return by June, averaging about six months for the round trip. The Indians have less time in which to make the trip because of the violent storms on the west coast of India during the southwest monsoon, which makes sailing unwise during the months of June, July, August, and September.

When making the trip between the Persian Gulf and India it is customary for the Arabs, Persians, and Indians to make two round trips a season. The vessels leave at the same time as the ships going to Africa; that is, in August and September for Persian Gulf ships, and in November for Indian ships. Because of the monsoon storms, the Indians have to be home by June, while the Arabs only have to be out of Indian waters by June. Actually, Arab ships start arriving in November and are ready to leave India after their second trip in March or April. These trips between the Gulf and India usually average about three months a round trip.

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[10] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 413.

[11] K. B. Vaidya, *Sailing Vessel Traffic on the West Coast of India* (Bombay: Popular Book Depot, 1945), p. 57. I am indebted to Mr. Alexander Crosby Brown for calling this most valuable work to my attention.

The effect of the southwest monsoon in India is felt most in the southern part of India. In April the northeast winds change gradually to the southwest; the monsoon breaks in force on Ceylon in the third week in May and moves up the coast, hitting Bombay about the first week in June, and finally reaching Karachi about the last of June.

Along the Malabar coast it is not unusual for 150 inches of rain to fall in four months from May into September. However, farther north on the Sind coast there is only about twenty-five inches of rain during the whole southwest monsoon. Thus on the Malabar coast there is no coastal trade carried on from May through September. During a storm in May 1943 over two hundred vessels were sunk on the Malabar coast and more wrecked.[12] However, on the northern Sind coast of India native shipping is closed down only during June and July, so that there is a ten-month shipping season possible there, as compared to seven months on the Malabar coast. The west coast of India gets about a month more of the southwest monsoon than the western part of the Indian Ocean, where the northeast winds start about October. The northeast monsoon usually brings fair weather with little rain to the west coast of India. Away from the coast of India the southwest monsoon is a fair weather trade wind blowing up from Africa.

There are numerous Indian firms that will insure cargoes carried on Indian coastal sailing craft; the insurance rates give a vivid picture of the relative danger at sea during the various periods of the two monsoons:[13]

Season	*Month*	*Rate*
Change	November	1½%
Northeast Monsoon	December-January	1%
	February	1¼%
	March	1½-1¾%
Change	April	2½-6%
Southwest Monsoon	May	6-20%
	June-July-August	No insurance
	September	2½%
	October	1½%

This shows very graphically why Arab ships stay out of southern Indian waters from May to September, and why most local Indian craft are drawn up on the beaches. 505 132

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[12] Ibid., p. 16.

[13] Ibid., p. 156. These rates are average rates for the southern part of the coast, and of course would change for the northern part of the coast where the southwest monsoon does not set in until June.

II

Dates are probably as important a factor as the monsoons in maintaining the large lateen fleet in the waters of the Indian Ocean. 439 By a lucky coincidence, 505 the great date crop of Iraq begins to ripen just before the northeast monsoon sets in about October. The great maritime expansion of the port of Kuwait has probably been due in no small part to its proximity to Basra, the port through which most of Iraq's dates go.

Dhows come to Basra for dates from Kuwait, Bahrein, Persia, Oman, India, and even as far away as the Hadhramaut. Starting in the latter part of August and continuing into September, Kuwait deepwater ships are floated from the beaches, where they have rested for several months during the summer, making ready for the run to Basra to pick up dates. The farther the home port is from Basra, the earlier the ships must depart, so that craft from the Hadhramaut must allow a month or more to get to Basra, riding up to the Gulf of Oman on the summer monsoon and then working their way up the Persian Gulf, where the monsoon is not felt.

Almost without exception the date cargo is carried out of Basra on consignment for some merchant; sometimes the destination is known on leaving Basra, but often the consignment is sent to Aden or Mukalla (see Plate 23—bottom) in South Arabia for final shipping instructions from the Arab or Indian export firm shipping the dates. Dates are usually not carried into the Red Sea much past Hodeida in the Yemen in Kuwait ships, although Villiers[14] tells of a Kuwait *bhum* transporting a load of dates as far as Qizan in Saudi Arabia.

In such a manner dates have been leaving Iraq for decades bound for the southern shores—that is until the winter of 1949. In that winter, for the first time in many years, the great date-bearing Kuwait *bhum* fleet failed to appear in its usual strength in the waters along the southern shores of Arabia; only a portion of the usual quota appeared in Aden by the first of 1950. The dates that would ordinarily have come into Aden in Kuwait dhows came down unceremoniously under steam. What caused this abrupt change in the well-established status quo of the dhow trade? The same thing that has wrought so many other radical changes in the economy of the Middle East lately—oil!

Kuwait is actually a city-state with few industries except pearling, fishing, 361 and shipbuilding; there are no farms, no date plantations, and only 465

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[14] A. Villiers, *SS*, p. 366.

228 *mawarid*. O'Shea relates that in Oman the pearl is commonly referred to as *qumash,* which is also Arabic for "material" or "goods."[10]

228 133 Pearl-bearing oysters are found in most of the Persian Gulf waters in depths varying from just below low tide to 20 fathoms. On the Persian side of the Gulf the bottom falls off rapidly to the 50-fathom maximum in the Gulf. On the Arabian side the bottom slopes off gently so that there are extensive areas within the 20-fathom limit. Thus, there are few pearl oysters on the Persian side, although fine pearls have been reported from near Kharaq Island off Bushire, and from Lingeh, but these are exceptions. However, extensive pearl beds are found along the Arabian side, stretching almost continuously for 700 miles from near Ras al-Khaymah east of Sharjah on the Trucial coast, to Ras al-Misha'ab south of Kuwait, the best beds being between 5 and 10 fathoms. The most productive are located to the north and east of Bahrein Island; this is probably why Bahrein has been the pearl center of the Persian Gulf. However, Dr. A. E. Alexander, a leading authority on pearls who visited the banks in 1947, estimates that only 35 percent of the Gulf pearls come from around Bahrein Island; the remainder comes from the Trucial Coast and from the banks near Kuwait.

228 502 825 The success of any pearling season seems to be as unpredictable as the habits of the pearl oysters themselves; the oyster beds shift periodically so that their exact location is not known until the diving starts. Sometimes the pearls are plentiful and valuable, at other times they are neither. Sometimes a bank is sterile for several seasons; then the next it may yield all the highest quality pearls. None of the banks are charted; each *nakhoda* has his own knowledge of them and his own theories. Arab experts believe that the largest, most dense, and whitest pearls come from deep water, while shallow water yields only low density pearls tinted with some color. Some of the more pessimistic Arab observers claim that the Persian Gulf fisheries never yield over two first-quality necklaces in any one season.

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[10] Raymond O'Shea, *Sand Kings of Oman* (London, 1947), p. 133.

Fishweirs

[285] 226 The largest catch of fish on the Persian Gulf coast of Saudi Arabia and Bahrein Island comes from huge weirs, made from the stems of palm trees. The Arabs build these fencelike traps by driving a steel bar into the mucky bottom and inserting a palm stem into the hole as they withdraw the bar (Fig. 13); the stems are spaced close enough so that no fish can pass through and are tied together. There are two types of weir: a funnel type and a spear type.

● [133] In the Persian Gulf the maximum tidal drop is about eight feet. The fishweirs are built so that at low tide there is only a few feet of water on the offshore end of the weir. Where the ebbing tide sets up a definite current, the funnel type (Fig. 7) is used, placed so that the current washes through the trap. The fish carried along in the current are forced through the funnel into the stockade of the weir, the entrance of which is out of water at low tide. These weirs are usually built with the central axis parallel to the shore; however, in Tarut Bay many are not near any shore but are set across tidal currents in shallows. Sometimes several traps are set in a row. It is not exceptional for the ebb current in Tarut Bay to reach three knots in some places.

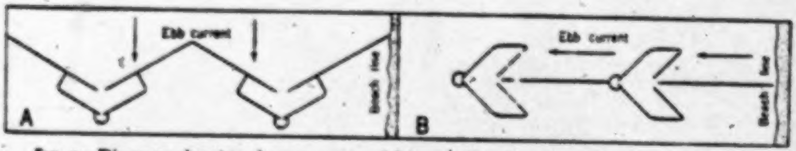

Fig. 7—Diagrams showing the two types of fishweir. The funnel type (A) catches fish that are washed into the enclosure on an ebbing tide. The spear type (B) is most effective in the case of fish moving parallel to the shore, since the ebbing tide causes only a slight current. Both types are found either singly or in a row, as illustrated.

Where the tidal ebb sets up merely a slight motion, the spear type of weir (Fig. 7) is used; the axis is oriented at right angles to the shore. As with the funnel type, several weirs are sometimes set in a row. Most of the fishweirs on Bahrein Island are of this type. The fish swim inshore on a flooding tide and out on an ebbing tide, and thus tend to work into the weirs; these traps are most effective in catching schools of fish swimming parallel to the shore. This type of weir is less effective than the funnel type, because its action is less positive.

Thus when the tide has gone out, the fisherman has a stockade of fish. He enters this stockade, or "head" of the weir, which is 10 to 15 feet in diameter (Fig. 8), with a net hitched to two 3-foot palm-stem poles. Holding

[text continued on p. 391]

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut
Bay side of the Ras Tanura peninsula. All during the fishing season constant
maintenance is necessary (Fig. 13).

226 Because of its shoal water, Tarut Bay is the only place along the Persian
Gulf coast of Arabia where large fishweirs can be built, and one of the best
● 133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly.

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
suits against the Arabian American Oil Company, asserting that the change
691 in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
424 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir
[435] rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few
Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras
Tanura area the sale was an economic blow, for much of the fish supplied to
Hasa Province came from the Ras Tanura traps.

Rock Mining

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[5] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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501 [5] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen, Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shuwes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

[502] One of th[e]se submarine springs,
228 located a few miles north of Jubail, has been marked by a spar
312 buoy by order of King Ibn Saud.

O'Shea states that while the divers on the Trucial Coast are
229 105 rarely attacked by sharks, about 30 were attacked and two killed around 1940.[27] Whitelock states that the Arabs claimed that the danger of sharks was ever present, but that their worst fear was from the saw fish, which had been known to cut divers completely in two.[28]

Rihani writes that what the Persian Gulf pearl diver dreads
226 most is the *dawl*. However, he apparently does not realize what
136 the *dawl* is, merely quoting Sheikh Khalifah ibn Muhammad al-Nabhani's *History of Bahrein:* "The *dawl* is a semi-fluid animal, about the size of a man's hand, round in shape, with a multitude of tendons about two feet in length, resembling a network of silk. It has no power of locomotion, but is driven by the waves and currents hither and thither. If it comes in contact with the body of man, it burns it, leaving a deep scar; and if it is lifted out of the water and left in the sun for five minutes, it dissolves."[29]

The zoologist will immediately recognize this description of the *dawl* as a jellyfish. It is in fact a small bell-shaped jellyfish with two to three foot-long tentacles. The *dawl* swims at any level and is practically invisible underwater; thus the divers cannot keep away from the stinging tentacles, which will burn the body and can put out an eye. Along the Ras Tanura peninsula, the *dawl* is most often seen near the surface shortly before flood tides.

136 There is a species of needle urchin (*Diadema*) in the Persian Gulf with spines from one or two feet long.[30] It is known that these spines will produce nasty slow-healing wounds if bumped into under water. This urchin may be the cause of some of the open sores on the divers' legs, although salt water alone could cause them, for the Persian Gulf has the highest salt content of all the ocean bodies, and constant immersion in salt water is known to produce a rash. However, as the *Diadema* is black and several

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[27] *Ibid.*, p. 138.

[28] H. H. Whitelock, *op. cit.*, p. 43.

[29] A. Rihani, *op. cit.*, p. 280.

[30] *Diadema* was first reported from the Persian Gulf by this author: A. H. Clark and R. LeB. Bowen, Jr., "Echinoderms of Saudi Arabia," *American Museums Novitates*, No. 1390 (1949).

feet in diameter, it is easily seen under water, and thus more 136 easily avoided than the *dawl*. The Arabs have no fear of the sea turtle and they relate that when they find one of these on the pearl banks, they ride it to the surface by grabbing it behind the neck and directing it upward.

But the dangers from sharks and devilfish (rays) are slight 164
compared to the physical danger resulting from simply driving 147
oneself past the limit of human endurance. The "bends" are a 752
common affliction among the divers and may cause severe pains in the joints, paralysis, or even death. Suppuration of the eardrums and rheumatism are also common. The divers may lose blood from surfacing too quickly or from staying under too long; Frederick Simpich tells of seeing a man come up from a 10-fathom dive bleeding at the nose as if someone had hit him with a ball bat.[31] Whitelock states that the divers of the Trucial Coast were very emaciated and suffered from inflamed eyes, which they treated with antimony.[32]

Divers never eat while working, except for a sip of tea or 262
water, as food would cause nausea. When the sun has sunk so 147
low that diving stops, they eat a few dates or a little rice and drink a little tea, but that is all. This is one of the reasons why they become so weakened and emaciated during a season. Sleep is the only energy builder the divers have.

OPENING THE OYSTERS

With dawn the first activity of the day is the opening of the 228 oysters caught the day before. By this time the oysters have been out of the water long enough for their shells to open, so that one does not have to fight them. The oysters are not divided according to divers, but are simply piled in sacks on the deck, so that no one knows exactly who caught the one that may contain the great pearl. After the valves are parted, the openers knead through the flesh, extract any pearls, and throw the shells and the meat overboard. Less than one-third of the oysters yield pearls and these are mostly "seed pearls," those very small irregularly-shaped pearls which might well be called "pearl dust."

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[31] F. Simpich, *National Geographic Magazine*, vol. 36 (1919), pp. 369-93.

[32] H. H. Whitelock, *op. cit.*, pp. 38, 44.

228 Each diver has two lines, one attached to a stone or iron diving weight; so that they will not become fouled, they are passed over sweeps left projecting over the gunwales athwartship and lashed down to the tholepins. The diver puts his feet into a loop over the diving weight (or simply lets the rope pass between his toes), releases the rope by untying a slipknot, and, holding the rope tightly, plummets to the bottom. As soon as he releases the line with the weight attached, the attendant hauls it to the surface. In the meantime the diver frantically plucks all the oysters he can before exhausting his air. He usually crawls on one hand and one foot, propelling himself with his free foot and collecting the oysters with his free hand. He puts the oysters into an open-weave palm-leaf basket fastened to his waist or around his neck, or hitched to a rope (which he holds or which is tied to his body). When he is ready to come to the surface, he jerks this rope.

The maximum depth at which the divers work is about 12 fathoms (72 feet). The average length of time they remain under water has been greatly exaggerated: some stories say 5 to 10 minutes. Villiers,[4] who spent two months on a buyer's *jalbut* with the Kuweit fleet, states that the divers stayed under water from 40 to 90 seconds, averaging about a minute. O'Shea[5] spent some time with the divers of the Trucial Coast, and he also states that the time averaged about a minute, ranging from 40 to 75 seconds. Hugh Smith[6] observes that the Arabs are the best divers employed in the Ceylon fisheries, staying down from 60 to 90 seconds; he cites an authentic case of an Arab who stayed down 109 seconds in 7 fathoms of water.

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Ordinarily the diver remains under water for about a minute and rests for two or three minutes; on a good day he may make 30 or 40 dives, totaling half to three-quarters of an hour, and by the end of the season he may have completed more than 3000 dives in 30 to 50 feet of water.

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The diver's worst enemy is fatigue. He has little fear of sharks and, indeed, is seldom bothered by them, though O'Shea[7] speaks of an attack on 30 divers, two of whom were killed under water. Whitelock[8] states that the greatest fear of divers on the Trucial Coast is the sawfish, which has been known to cut divers in two. The creature most feared by the divers in the Persian Gulf, at least on the north banks between Kuweit and Bahrein, is a jellyfish known to the Arabs as the *dawl*, which has two- to three-foot stinging tentacles that can easily put out an eye

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[4] Alan Villiers: Sons of Sinbad, New York, 1940, p. 392.

[5] Raymond O'Shea: The Sand Kings of Oman, London, 1947, p. 137.

[6] H. M. Smith: The Pearl Fisheries of Ceylon, *Natl. Geogr. Mag.*, Vol. 23, 1912, pp. 173–194; reference on p. 182.

[7] *Op. cit.*, p. 138.

[8] H. H. Whitelock: An Account of the Arabs of the Pirate Coast, *Trans. Bombay Geogr. Soc.*, Vol. 1, 1844, pp. 32–49; reference on p. 43.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 312 502 436 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 442 439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they all [illegible]

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

228 464 132 for the minimum winter air temperature to be in the middle forties; during this period the sea water temperature in shallow water will be in the low sixties.

228 147 464 132 Pearl diving requires that the diver's body be almost continually in the water. From experience the Arabs have found that the surface water temperature has to be about 85° F. before continued deep-water diving is feasible; thus the main pearling season (*al-ghaws al-kabir,* or "great diving") averages four months — from June into the first week of October. During this time the maximum surface water temperature exceeds 90° F. (in August) off Hasa. O'Shea states that on the Trucial Coast *al-ghaws al-kabir* often lasts until late October, the water apparently remaining warmer longer there than further north.[19] In addition to *al-ghaws al-kabir,* there are two other seasons: the "cold diving" season (*al-ghaws al-barid*) running from April to May, and the *mujannah,* running from October to March. The smaller boats run out in the shallower (warmer) waters for *al-ghaws al-barid* and act as a barometer for the season, while the *mujannah* is worked by waders who work along the shore when the tide is out, many equipped with glass-bottom "look boxes."

527 228 For *al-ghaws al-kabir* the various fleets, whether from Kuwait, Bahrein, or the Trucial Coast, leave port en masse with flags flying, to the beating of drums and Arab chants. The few boats from the smaller ports slip out without fanfare. It is a stirring sight to see these fleets of dhows maneuver with their sweeps and then set forth under huge spreads of lateen sails, with their freshly oiled, burnt-brown hulls glistening across the aquamarine water, like some ancient Phoenician or Roman fleet.

228 502 An admiral represents the pearl fishing fleet of each port. It is the admiral's boat which leaves the port first, and the admiral's duty to determine when the water becomes too cold for continuous diving. It is considered improper (by the owners) for the *nakhoda* of any large vessel to leave the pearl banks before the admiral leaves.[20]

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[19] R. O'Shea, *op. cit.*, p. 137.

[20] The admiral of al-Khobar, Saudi Arabia, now works for the Arabian American Oil Company, for al-Khobar no longer sends vessels out to the pearl grounds.

hour, after which time the Kuwait diver is dragged out of the 228
water and huddles in some spot on the ship looking more dead 461
than alive. He may average four shifts a day, making a total of 40 dives; O'Shea states that under excellent conditions the Trucial divers average 50 dives a day.[28] During this time ~~he~~ has spent almost one hour under water. Ten dives are not difficult, nor are 50 excessive in one day for anyone experienced; but day after day and week after week the diving goes on — for four months. When the season is over, the diver has weathered the impossible; 228
he has probably completed over 3,000 dives in from 30 to 50 feet 461
of water, and has spent over 50 hours under the surface of the 147
Persian Gulf — that is, over a full forty-hour week without air, valiantly striving to gather all the oysters he can see through his blood-shot and irritated eyes, which become less sensitive with each dive.

Every ten days or so the divers do get a day of rest, and if the 228
shamal is blowing they have to wait it out, as it roils the water. 461
Occasionally they have to go ashore to bury a diver who fails 147
to complete his 3,000 dives. It is not surprising that there are 164
one or two empty stations on each boat; their occupants lie huddled corpse-like under their cloaks in some part of the ship, too sick from scurvy or plain fatigue to dive. After they have been at it for many weeks, the divers are apt to get convulsive shivers when they come out of the water for their rest, even though the temperature may be 110° F. and their tenders are covered with a lather of sweat. There are few, if any, white men who could [771]
endure just one day of such punishment; the Arab could not either except for his belief that Allah is merciful and that a Paradise awaits him.

Every dhow has to put in for water and food every three weeks 228
or so. In recent years the pearling fleet has used the oil company's 312
pier at Ras Tanura for water, but vessels have been known to replenish their water supply from some of the submarine springs which gush into the Persian Gulf. A diver goes down with an [415]
empty skin and opens it in the potable stream; he can bring up fairly fresh water by this means. One of thse submarine springs,

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case stories one hears about the amazing power of the Arabs to stay under water from 5 to 10 minutes or more are absurd.

[28] R. O'Shea, *op. cit.*, p. 137.

feet in diameter, it is easily seen under water, and thus more 136
easily avoided than the *dawl*. The Arabs have no fear of the sea turtle and they relate that when they find one of these on the pearl banks, they ride it to the surface by grabbing it behind the neck and directing it upward.

But the dangers from sharks and devilfish (rays) are slight 164
compared to the physical danger resulting from simply driving 147
oneself past the limit of human endurance. The "bends" are a 752
common affliction among the divers and may cause severe pains in the joints, paralysis, or even death. Suppuration of the eardrums and rheumatism are also common. The divers may lose blood from surfacing too quickly or from staying under too long; Frederick Simpich tells of seeing a man come up from a 10-fathom dive bleeding at the nose as if someone had hit him with a ball bat.[31] Whitelock states that the divers of the Trucial Coast were very emaciated and suffered from inflamed eyes, which they treated with antimony.[32]

Divers never eat while working, except for a sip of tea or 262
water, as food would cause nausea. When the sun has sunk so 147
low that diving stops, they eat a few dates or a little rice and drink a little tea, but that is all. This is one of the reasons why they become so weakened and emaciated during a season. Sleep is the only energy builder the divers have.

OPENING THE OYSTERS

With dawn the first activity of the day is the opening of the 228
oysters caught the day before. By this time the oysters have been out of the water long enough for their shells to open, so that one does not have to fight them. The oysters are not divided according to divers, but are simply piled in sacks on the deck, so that no one knows exactly who caught the one that may contain the great pearl. After the valves are parted, the openers knead through the flesh, extract any pearls, and throw the shells and the meat overboard. Less than one-third of the oysters yield pearls and these are mostly "seed pearls," those very small irregularly-shaped pearls which might well be called "pearl dust."

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[31] F. Simpich, *National Geographic Magazine*, vol. 36 (1919), pp. 369–93.
[32] H. H. Whitelock, *op. cit.*, pp. 38, 44.

Maritime Arabs MK2
Bahrain MZ2

less than that, but their attitude of listlessness and in- M 567
difference has tended to pull all the rest down to their 464
level. Just why slavery never took root in Bahrein, why 461
the Arabs there never bought slaves to do their diving, [B
is difficult to see. It seems such an easy way to get rich. 567]
One reason why Bahrein is a much stronger community financially now than its southern competitor is the fact that slaves have never been brought in to any large extent.

It is a great temptation, this opportunity to have one's M
work done by slaves, and nothing could seem to offer 567
greater profits. The slaves have no rights. They can be punished if they show less diligence than their owner thinks adequate. They receive no wages at all, only such food and clothing as their master sees fit to give them. Arabs are not the only people that have been deceived by this fallacy. We believed it ourselves a hundred years ago. It has been a disastrous policy from every standpoint. Nothing could exceed the indifference and laziness of the average slave under such conditions. The money spent on food and clothing for these slaves brings a smaller return in service rendered than any wages paid in Arabia. Of that much any one is sure who has
watched them work, or rather has watched their very suc- M
cessful efforts to avoid doing any work. Prostitution is 567
commoner on that coast than in any other eastern Arabian 548
community. Slave women are the toys of any man who buys them, and what the Pirate Coast sowed in its treatment of helpless women slaves, it is reaping in an atmosphere of degradation that envelops the entire community from the lowest to the highest.

As passive resisters these slaves are superb. I have M
seen one of them, disgruntled by some mistreatment or 567
insult, simply lie down on the job and no expostulation 158 ●

567 or threat seemed to stir him. They are exceedingly
158 superstitious, too, and are frequently visited by a familiar spirit, who takes complete possession of the individual. The Arabs on the Pirate Coast are not especially superstitious. They are Sunni Mohammedans, and that sort of faith does not readily lend itself to superstition. However, when one of these negro slaves starts up as if suddenly crazed, and runs around shouting and gesticulating and talking earnestly in a changed voice as if a new personality had possessed him, even the hard Arab masters are a good deal awed and hesitate to inflict the punishment they had planned. These visitations may come at the most opportune times, and it takes more hardihood than the Arab usually possesses to disregard such a warning. I have had such a slave jump suddenly from the operating table when all preparations were complete and I had the knife in my hand to begin an operation for the removal of a tumor from his neck. The operation was to be done under local anesthesia, so the patient was fully conscious. We were thankful that he did not wait till ten minutes later when the operation would have been well under way. These slaves are not shamming in any ordinary sense. They thoroughly believe in the genuineness of such manifestations. They do not thus escape every whipping, but these visitations undoubtedly do protect them from a certain number of terrible punishments at the hands of their Arab masters.

565 In these diving communities the actual control even
664 of the civil powers rests in the hands of the diving captains and the pearl merchants. The town of Ras el Kheima has a number of divers who regularly dive in boats the captains of which live in Dibai and Sharja. During one winter war of a small sort broke out between

5: Harrison D-4 (1912-1924) 1924 MI Middle East
Marit. = Arabs MK2

CHAPTER IV

PEARL DIVERS OF THE EAST COAST

ALONG the East Coast of Arabia are located the 228
largest pearl fisheries in the world. Pearl fish- 433
ing has been the occupation of that part of 162
Arabia for many centuries. Probably a hundred thousand Arabs are engaged in this hard and dangerous work throughout the summer months. Half a million people must depend on these divers for their livelihood. This is not a large percentage of the inhabitants of Arabia, but the pearl divers are worthy of consideration, for the outside world has come into closer contact with them than with any other Arab community in the entire peninsula. As might be expected, the coast cities contain artisans, laborers, a few date gardeners, and merchants. These differ in no significant way from similar classes elsewhere. The pearl diving community is unique.

Nothing can exceed the barrenness of the coast where 311
these men live. From Kuwait in the north to Ras el 433
Kheima in the south, a distance of three hundred miles, 312
scarcely a green thing is to be seen, except for a few miles of date gardens at Katif and a smaller number at Dibai. The water available for drinking is brackish and almost undrinkable in many places. The inhabitants of Umm el Qaiwain, one of these towns, "drink mud," to quote the Arabs. The coast is so utterly unproductive that all food must be imported, and in some places even the fuel and drinking water.

[285] The diver holds onto
another line to which is tied an open-weave palm leaf basket for
228 the oysters; sometimes the diver has the oyster basket tied to his waist or around his neck and has the line tied to his body. When the diver is ready to come up, he gives several tugs on the rope. Thus the diver does not have to waste his valuable energy in swimming up or down. When he first reaches the bottom, he attempts to go out perpendicularly from the boat, frantically plucking all the oysters he can see before his air gives out. The diver usually crawls on one hand and one foot, using the other foot to propel himself and his free hand to collect the oysters.

228 The divers wear a horn noseclip similar to a clothespin; this
292 keeps the water out of their noses and enables them to hold their breath longer. Sometimes a diver will stuff cotton or beeswax into his ears to keep the water out. A set of leather finger thimbles protects his fingers from coral and other sharp objects; he wears only a loin cloth. This is the equipment universally used in the Persian Gulf,* whether the diver is out of Kuwait, Bahrein, the Trucial Coast, or Persia. These divers wear no goggles and many
[164] have impaired vision from trachoma, so their efficiency is cut down considerably. It is strange that the Arabs have not added at least eye socket goggles, which the South Sea Island and Philippine pearl divers have eagerly accepted.

228 Alan Villiers states that the Kuwait pearl divers make ten
461 consecutive dives and then rest while a "substitute" makes ten; these two divers have the same attendant.[34] Divers in other parts of the Gulf work continuously, taking a rest all together at certain predetermined times, sometimes corresponding with prayer-time.

The diver stays under about a minute, then rests for two or three.[35] Ten dives would consume about three-quarters of an

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[34] A. Villiers, *op. cit.*, p. 392.

[35] The average length of time that a diver stays under water has long been a controversial question. Alan Villiers (*op. cit.*, p. 392), who spent two months with the Kuwait pearling fleet, states that the divers averaged about a minute, ranging from 40 to 90 seconds. O'Shea (*op. cit.*, p. 137), spending some time among the Trucial coast pearlers, states that divers there remain under water from 40 to 75 seconds, also averaging about one minute. Whitelock (*op. cit.*, p. 43), who visited the Trucial coast pearl fisheries one hundred years ago, stated that the divers averaged about 40 seconds under water, but that he never saw them remain over a minute. Hugh Smith (*op. cit.*, p. 183) states that in the Ceylon fisheries the Arabs are the best divers, staying down from 60 to 75 seconds, with a normal maximum of 90 seconds, and that there is an authentic case of an Arab staying under 109 seconds in seven fathoms of water. In any

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K MA 439 of them Arab. I noticed in the registry office of the Customs building that some were entered as Somali, and a few were registered in the Hadhramaut. No longer did they bring down picturesque cargoes of myrrh and frankincense (if they ever did) or ship out slaves and ivory, ambergris and hippopotamus teeth. They brought salt and dried fish; and when they came, the quantities of hashish and other drugs in the town showed a significant increase. They loaded little at Zanzibar for the homeward voyage, but went on down to the coast of Tanganyika.

We completed the discharge of our outward goods at Zanzibar, and the crew busied itself for weeks selling Hadhramaut basketware and Aden haberdashery — port of origin, Yokohama. When we sailed, leaving our *nakhoda* behind, our only cargo was the parcel of condemned dates, which the Somali would not have. MA [164] We passed on down to the delta of the Rufiji River, a place given up to mosquitoes, malignant malaria fever, monkeys, sad Swahili, rain, and the best mangrove poles in the world. Here we lay six weeks, while a cargo of some 142 score of poles was laboriously cut and loaded. For this work, Swahili were engaged to help our crew, and at last the bad dates found consumers. The mangrove poles were ferried out in the dhow's longboat, and paid for in silver shillings to a white supervisor. There were some twenty dhows loading in the Rufiji delta at the time, all for the Persian Gulf.

It struck me as strange that the dhow should spend so much time embarking a cargo in which the total investment was less than $500, for no matter how I tried to figure things out, I did not see how it could possibly be worth her while to haul such a paltry cargo so long a distance, or how she could make enough from it to show a reasonable profit on the voyage. There was certainly something mysterious about this mangrove pole business, and the white supervisor, energetic as he was, by no means knew all that went on. I noticed later, when we sold our cargo to King Ibn Saud's agents at Bahrein for use in a new palace at Riyadh, that the Arab receipt was for 295 score, and the price paid, over 4,000 rupees, approximated $1,200.

MA 505 567 Z 656 There was some attempt in Zanzibar to regulate the dhow traffic, and precautions were taken to see that there was no slaving, under any guise. A local act requires that evidence be shown

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

● 164 752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 312 502 438 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 442 439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they all end up in Bombay

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

Maritime Arabs MK7
Bahrain MZ2

M 228 164 such a number of chronic running ears. The lungs are often affected, and all along the diving coast pulmonary tuberculosis is common. This is not remarkable when we know that in the opening days of the season the men frequently dive in water that is so cold that they spit blood. Many return from their summer of semi-starvation and unsuitable diet of rice and dates with their gums sore and bleeding from scurvy.

Living conditions in the community* are what might be M 511 expected. Disease is common. The death rate is high. Poverty is universal. In good years the standard of life is none too high. In bad years it is reduced almost to the starvation point. During a hard year the food of the divers is poor in quality and scanty in amount almost to the degree of partial starvation. They usually live in date-stick huts, and in the winter must frequently shiver in unwarmed houses because they have no money for fuel.

M 871 212 In such communities there is little or no interest in education. A diver has reason enough, one might suppose, for wanting to know how to read and write and keep his own accounts, but it is rare that one of them knows as much as that, and apparently it is equally unusual to find one who is trying to educate his children so M 868 that they may escape the slavery that binds him. The boys are frequently taken out to learn pearl diving while B 571 185 658 they are still under twelve. In Bahrein the American Mission has tried for many years to develop educational work of an elementary sort, but has found it practically impossible because there is no demand for such things. The considerable Persian community in the city has made efforts from time to time to establish educational work for its own boys. The Persian schools exist for a little

*[of pearl divers -- Analyst]

[502] One of th[e]se submarine springs,
228 located a few miles north of Jubail, has been marked by a spar
312 buoy by order of King Ibn Saud.

228 165 O'Shea states that while the divers on the Trucial Coast are rarely attacked by sharks, about 30 were attacked and two killed around 1940.[27] Whitelock states that the Arabs claimed that the danger of sharks was ever present, but that their worst fear was from the saw fish, which had been known to cut divers completely in two.[28]

228 925 136 Rihani writes that what the Persian Gulf pearl diver dreads most is the *dawl*. However, he apparently does not realize what the *dawl* is, merely quoting Sheikh Khalifah ibn Muhammad al-Nabhani's *History of Bahrein:* "The *dawl* is a semi-fluid animal, about the size of a man's hand, round in shape, with a multitude of tendons about two feet in length, resembling a network of silk. It has no power of locomotion, but is driven by the waves and currents hither and thither. If it comes in contact with the body of man, it burns it, leaving a deep scar; and if it is lifted out of the water and left in the sun for five minutes, it dissolves."[29]

The zoologist will immediately recognize this description of the *dawl* as a jellyfish. It is in fact a small bell-shaped jellyfish with two to three foot-long tentacles. The *dawl* swims at any level and is practically invisible underwater; thus the divers cannot keep away from the stinging tentacles, which will burn the body and can put out an eye. Along the Ras Tanura peninsula, the *dawl* is most often seen near the surface shortly before flood tides.

136 There is a species of needle urchin (*Diadema*) in the Persian Gulf with spines from one or two feet long.[30] It is known that these spines will produce nasty slow-healing wounds if bumped into under water. This urchin may be the cause of some of the open sores on the divers' legs, although salt water alone could cause them, for the Persian Gulf has the highest salt content of all the ocean bodies, and constant immersion in salt water is known to produce a rash. However, as the *Diadema* is black and several

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[27] *Ibid.*, p. 138.

[28] H. H. Whitelock, *op. cit.*, p. 43.

[29] A. Rihani, *op. cit.*, p. 280.

[30] *Diadema* was first reported from the Persian Gulf by this author: A. H. Clark and R. LeB. Bowen, Jr., "Echinoderms of Saudi Arabia," *American Museums Novitates*, No. 1390 (1949).

Kuwait MI/1

K MA 505 565

Negro origin, the descendants of slaves, though not now slaves themselves. Many others are of Iranian origin. Almost none are Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

MA 565 426 465 228 428

As the *nakhoda* class is tied to the merchant by a structure of debt, so also are the sailors tied to the *nakhoda* class in the same way. All deep-sea sailing is paid for on a shares system, and there are no wages. Often the *nakhoda* of the deep-sea dhow has an interest in a pearling vessel (though not now to anything like the same extent as in former years), and the sailor may be bound to him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

MA 505 511 342 291 515 501 565

The sailors go to sea because they know no other life, and they make a wretched living by incredibly difficult methods. They have no possessions other than the clothes they stand in, and one or two spare gowns, a good headcloth, and a few sarongs. Their toothbrush is the twig of a tree; their ablutions are made five times daily at a mosque well, or in the sea; they know no shelter and rarely have a bed. The younger seamen, I have noticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere.

MA 565 554 165

What keeps the seaman a disciplined and more or less contented worker is his hope of reward, principally from smuggling or his own ventures, and his ambition to get hold of a tiny shop in the *suq* of his home town. This is an ambition he rarely achieves. His more usual fate is to die young, especially if he be also a pearl diver.

228 Each diver has two lines, one attached to a stone or iron diving weight; so that they will not become fouled, they are passed over sweeps left projecting over the gunwales athwartship and lashed down to the tholepins. The diver puts his feet into a loop over the diving weight (or simply lets the rope pass between his toes), releases the rope by untying a slipknot, and, holding the rope tightly, plummets to the bottom. As soon as he releases the line with the weight attached, the attendant hauls it to the surface. In the meantime the diver frantically plucks all the oysters he can before exhausting his air. He usually crawls on one hand and one foot, propelling himself with his free foot and collecting the oysters with his free hand. He puts the oysters into an open-weave palm-leaf basket fastened to his waist or around his neck, or hitched to a rope (which he holds or which is tied to his body). When he is ready to come to the surface, he jerks this rope.

The maximum depth at which the divers work is about 12 fathoms (72 feet). The average length of time they remain under water has been greatly exaggerated: some stories say 5 to 10 minutes. Villiers,[4] who spent two months on a buyer's *jalbut* with the Kuweit fleet, states that the divers stayed under water from 40 to 90 seconds, averaging about a minute. O'Shea[5] spent some time with the divers of the Trucial Coast, and he also states that the time averaged about a minute, ranging from 40 to 75 seconds. Hugh Smith[6] observes that the Arabs are the best divers employed in the Ceylon fisheries, staying down from 60 to 90 seconds; he cites an authentic case of an Arab who stayed down 109 seconds in 7 fathoms of water.

228
461 Ordinarily the diver remains under water for about a minute and rests for two or three minutes; on a good day he may make 30 or 40 dives, totaling half to three-quarters of an hour, and by the end of the season he may have completed more than 3000 dives in 30 to 50 feet of water.

228
461
165
136 The diver's worst enemy is fatigue. He has little fear of sharks and, indeed, is seldom bothered by them, though O'Shea[7] speaks of an attack on 30 divers, two of whom were killed under water. Whitelock[8] states that the greatest fear of divers on the Trucial Coast is the sawfish, which has been known to cut divers in two. The creature most feared by the divers in the Persian Gulf, at least on the north banks between Kuweit and Bahrein, is a jellyfish known to the Arabs as the *dawl*, which has two- to three-foot stinging tentacles that can easily put out an eye.

113

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[4] Alan Villiers: Sons of Sinbad, New York, 1940, p. 392.

[5] Raymond O'Shea: The Sand Kings of Oman, London, 1947, p. 137.

[6] H. M. Smith: The Pearl Fisheries of Ceylon, *Natl. Geogr. Mag.*, Vol. 23, 1912, pp. 173-194; reference on p. 182.

[7] *Op. cit.*, p. 138.

[8] H. H. Whitelock: An Account of the Arabs of the Pirate Coast, *Trans. Bombay Geogr. Soc.*, Vol. 1, 1844, pp. 32-49; reference on p. 43.

439 487 or other dried fish, *ghee* (clarified butter), honey, tobacco, grinding stones, and straw work (fans, mats, and baskets). It must be remembered that most of the cargo moving around the Middle Eastern waters in small vessels, whether dhows or small coastal steamers, is for the native trade and is destined for native bazaars, which are noted for the cheapness and poor quality of their wares. Once the dhow is loaded it is ready for the trip down the East African coast; however, the Arabs sometimes take a month or more to collect a full cargo.

Upon the *nakhoda* of the dhow rests the responsibility of getting another cargo for continuing down the African coast once the consigned date cargo is discharged. Invariably the *nakhoda* is the nominal owner of his dhow, so he acts as his own agent. As the cargo loaded after the dates are discharged is not on consignment, its selection is a matter of the *nakhoda's* judgment, with an eye to what will sell best in the African markets. However, a cargo that must be regarded as essentially on consignment is that of passengers. On some Africa-bound dhows passengers comprise a considerable portion of the cargo. The competition for passengers is very brisk, so that there is sometimes a race among the various *nakhodas*, who hasten to neighboring ports via motor launch as soon as their ships reach South Arabia to discharge their dates.

● 167 505 Through the dhows there is a constant flow of Arabs from South Arabia and Oman and of Indians from India. The immigrants usually become porters, hawkers, musicians, or beggars, but if they are very industrious, they may end up owning a small shop in the *suq*. Their usual aim in migrating is to work long enough so that they can go home after they save a little money; usually they never make enough to get out. Villiers[16] states that the Italian officials in Mogadiscio checked four thousand passengers on thirty-five dhows that were in the harbor when he was there in 1939. In 1937 the fare along the Hadhramaut coast between ports was three rupees.[17] In 1939 the fare from South Arabia to any African port was only eight rupees for men and twelve for women.[18] In Aden in 1950 the fare for natives traveling as deck passengers on A. Besse and Company dhows with no accommodations was 15 rupees to Berbera, Djibouti, and other ports about 150 miles from Aden; thirty rupees to Massaua, Mukalla, and ports about 450 miles away; and one hundred rupees to Jidda, Port Sudan, or ports approximately one thousand miles from Aden. These were fixed rates on the dhows operated by Besse; other dhows that

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113 [16] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 404.

[17] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 315.

[18] A. Villiers, *SS*, p. 78.

were trading down the coast could easily afford to undercut these rates. 167

As was mentioned above, women are usually charged higher rates for travel on dhows; this is because they have to be segregated and usually manage to make trouble, unintentional as it may be. Villiers[19] gives a graphic description of the nuisance a group of women can cause on an Arab dhow. For centuries women have apparently been creating disturbances on Arab dhows, for Niebuhr, who traveled down the Red Sea on a dhow in 1763, relates that

> In our passage, we found ourselves in danger of a worse misfortune than shipwreck. The females, who were lodged under us, more than once suffered linen, which they were drying, to catch fire, in consequence of which the vessel must have been burnt, if we had not been alarmed by their screams. . . . Those women were indeed extremely troublesome and indiscreet.[20]

Besides the ship's cargo, every member of the crew usually lays in a 439 store of goods that he personally peddles. Each sailor is allowed a sea chest 505 (see Plate 22—bottom), which he fills with print goods, turbans, flashlights, razors, sarongs, cigarettes, and perfumes which are later diluted. The *nakhoda* usually has some rugs or carved wooden chests to peddle (see Plate 17—bottom). Virtually none of this material enters Africa legally, but is for the most part smuggled in. Most of these trivial goods are carried in by the Arabs personally. Villiers[21] relates that he saw one man wear three gowns and eight sarongs, then wrap more sarongs around his knees, and make six trips through customs a day. Sometimes they are detected and stripped, but that is part of the risk. Often the Africans come out in canoes at night and remove the goods in small quantities. Frequently Arabs travel down the African coast on dhows as professional smugglers, living only for the smuggling they can accomplish. This sort of trading has been going on for centuries, for Paris[22] related that '. . . leur navires sont de vraies caravanes dans laquelles tous les matelots ont un intérêt.'

For the Arabs and the Persians, the trip down the African coast is leisurely and slow. It is not unusual for a dhow to stay in a port for three or four weeks haggling over a cargo, only to leave without having transacted any business. There is no rush, simply because there would be a long wait for the southwest monsoon to set in and carry them back north, if

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[19] Ibid., p. 78 ff.

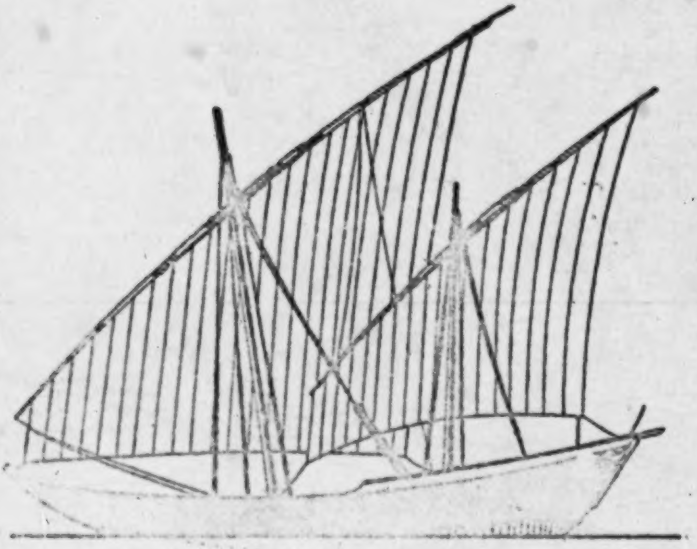
[20] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 219.

[21] A. Villiers, *SS*, p. 143.

[22] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra—Européens* (Paris, Bertrand, [1841]), p. 9. '. . . their ships are true caravans in which every sailor has an interest.'

of Dar es Salaam, loaded her with mangrove poles, and brought 505
her back to Zanzibar again, where the *nakhoda* had ostensibly 565
been trying to assemble passengers and extra cargo for the return 459
to Arabia but in fact had been enjoying a new harem.

Mates are paid by shares, and are, in my opinion, an oppressed 505
class. They carry their own ventures, engage in smuggling on a 565
465
451



[501]

Baggala

small scale — haberdashery, currency, and so forth — and generally keep the ship's books. They may become *nakhodas* of small *booms*, running to the Basra river; but it is unusual for a man from the more dignified deep-sea trades to descend to this. There is no social status about the *nakhoda* of a coastwise water dhow.

Ships are built by shipwrights who employ no naval architects. 396
Both builders and riggers' lofts are unknown. The ships are put 501
together entirely by eye and take the traditional form either of [171]
the double-ended *boom*, or the carved and embellished *baggala*,
which obviously has a considerable ancestry from the Portuguese
galleon.

228 The captain watches the whole procedure closely to see that no pearls are secreted; when the last oyster is opened, he collects all the pearls, ties them in a small red cotton flannel cloth, and puts them in his sea chest on the poop deck.

The Persian Gulf procedure for opening the oysters is in vivid contrast to the practice of some of the other pearl fisheries. In Ceylon, for example, all the oysters for any one day are brought into the yards of the company holding the concession to the banks. Each diver carries his own oysters up to the stockaded compound where he divides them into three piles. The company inspector comes around and tells the diver which pile he can take; when he leaves the compound he has to give back a portion to his attendant and to the captain of the boat.

There is evidence that some such practice may have been carried out along the Arabian coast in the past. A century ago the pearlers of the Trucial Coast opened their oysters on land, for Whitelock relates that the pearlers remained at sea until they had a boatload of oysters and then proceeded to the nearest island to open the shells.[29]

228
172 During medieval times the Arabians on the mainland controlled Bahrein Island; their capital was at Hofuf. Huge heaps of oyster shells, some a hundred yards long, stretch along the shore a mile south of al-Khobar. Nearby have been found grinding pestles, stone diving weights, and crude pottery fragments. The species of oyster in these mounds is the same small variety commonly found today. When the refinery at Ras Tanura was being built, a low hill was leveled by bulldozers. Cutting through many ancient graves they turned up a stone diving weight among the numerous bones and pottery. Between Jubail and Ras Tanura, several more ancient shell heaps have been located high on the beach. Some of these are composed *entirely* of the large plate-sized species of pearl oysters; now this species is found only occasionally.

MARKETING AND DIVISION OF PROFITS

228
437 The majority of pearls are sold to Bombay merchants, but frequently brokers in search of a bargain will buy the best before

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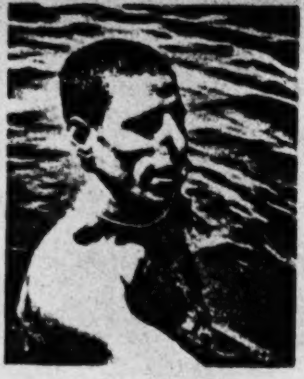
[29] *Ibid.*, p. 42.

Typical date palm garden in the oasis town of Hofuf.

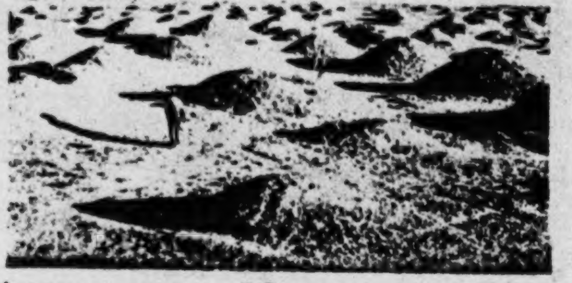
S.A.
245



Pearl diver with nose-clip preparing to dive beside a pearling dhow.

M.A.
172
764

Unknown burial mounds dating back to ancient times near Awali—Bahrein Island.



M.A.
228

p. 29 (6)

228
464
largest about 18; but as the smaller boats were the more numerous, he used 9 as an average to arrive at a total of 29,000 men employed in the pearl fisheries.

Zwemer estimated the number of pearling boats out of Bahrein in 1896 as about 900, those out of Qatar as 200, and total number of boats as 5,000, employing 30,000 men.[14] However, the figure of 900 does not seem to justify the total of 5,000; since Zwemer lived on Bahrein Island the figure of 900 would seem to be the more accurate. Zwemer is apparently responsible for the figure of 5,000 dhows in the pearl fisheries which has appeared in print so frequently since: Villiers and Simpich state that there were 5,000 boats at the turn of the century, employing 80,000 men,[15] while O'Shea states that in normal times there are about 5,000 boats employing 74,000 men.[16]

Evaluating these estimates and others not mentioned, one is led to the conclusion that there were never over 3,000 boats engaged in the Persian Gulf pearl fisheries, and probably not over 40,000 men. Taking the figures that may be considered as relatively reliable, we arrive at the following average for the fleet during the boom years:

Bahrein (Zwemer)	900
Kuwait	600
Qatar (Zwemer)	200
Eastern Arabian ports	200
Trucial coast (Whitelock)	700
Persian ports (Whitelock)	100
	2,700

This figure would seem to be a fair estimate for the size of the pearling fleet at the turn of the century, and if anything is on the high side.

228
464
178
The first few decades of the present century were the last prosperous years that the Gulf pearl fisheries saw. Whereas, at the turn of the century there were almost 3,000 boats engaged in the fisheries, today there are hardly one-fifth that number. An

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[14] S. M. Zwemer, *op. cit.*, pp. 100–101.

[15] Alan Villiers, *Sons of Sinbad* (New York, 1940), p. 373; Frederick Simpich, "Rise of the New Arab Nation," *National Geographic Magazine*, vol. 56 (1929), p. 388.

[16] R. O'Shea, *op. cit.*, p. 132.

estimate of the number of boats operating in 1946 would be as 228
follows: 464
178

Bahrein	150
Kuwait	100
Darin, Qatif, Jubail	30
Trucial coast, Qatar, and Persian ports	250
	530

Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the 228
coincidence of the pearling season with the date harvest. Starting 245
about June there is a migration of men northward from the 221
Batinah Coast to the Trucial Coast; these men work the pearl 462
fisheries. Some go north in caravans, others sail up in their 464
bedens and other dhows. Opposed to the flood of men who make
this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home.

Bertram Thomas states that a considerable percentage of the 228
army of men annually migrating northward to the Trucial Coast 567
is composed of slaves.[17] These Batinah contingents are usually 464
accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.[18]

Pearl fishing is a seasonal occupation, as the divers must wait 228
for warm summer water before starting to dive. Probably few 464
people realize there is a winter in the Persian Gulf, and that 132
the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

[18] Ibid., p. 143

Kuwait MI 1

missed at least another 600, for no list which the dhows supply is MA 505 484 486
really reliable, and each ship carries many persons who are without European documents. As a new dhow arrives, sometimes dozens of her passengers will drop quietly over the side and disperse themselves among the dhows already in the harbour. As with MA [181]
the disposal of the seamen's ventures, all Arabs take a delight, regardless of their ports of origin, in the general defeat of European regulations.

II

K MA 505 441 MA [181]
At first glance, the whole deep-sea trade in dhows seems unorganized and almost unregulated. In point of fact, it is very well organized indeed, and has a tradition going back, probably, some thousands of years. There is no association of dhow owners in Arabia as there is a Country Craft Organization on the west coast of India, for the Arab of today is too inherently disunited and fiercely individualist to make this type of co-operation possible. But he can organize his own trade very well, nevertheless. The K MA 472
typical wealthy business family of Kuwait maintains offices, almost always managed by sons of the house who frequently rotate on the circuit, in all the more important centers of Arab coastal trade. The head office is at Kuwait or perhaps Basra, with branches at Aden (in the Crater, not at Steamer Point), Bombay, possibly one other west coast of India port, and Mukalla. Where there is not an actual branch of the family conducting business on a permanent footing, there is either a trusted agent (probably a relative), or one of the younger sons sent in the trading season to watch the family interests. This, for instance, is done at Berbera, in British Somaliland, which, when times are good, can absorb a surprising quantity of Iraqi dates carried there in dhows. The K MA 453 426
agent or family member is primarily responsible for the collection of debts — always a problem in a trade which is carried on without banking. A family carrying on business on such a scale will have a finger in perhaps a score big dhows, all nominally "owned" K [643]
by their own *nakhodas*. The cash resources of some of these families must be enormous, and behind them stands the Sheikh of Kuwait, who was a wealthy man even before oil was discovered in his territory.

Kuwait MI1

K MA debts, odd earnings not shared and even odder earnings which
451 were shared, and mysterious complicated procedures, some of
465 which I never did fathom, for the war came, and stopped my
439 investigations.

505 The son of the merchant family which owned our dhow, however, told me that her gross profit on the nine-month round voyage was 11,000 rupees, not including the proceeds of the crews' and officers' private ventures. But I think he exaggerated, for the total investment in the dhow was little more than that. But at any rate, the dhow's people were well satisfied and they all,
K save one, went back to sea with her. The *nakhoda* grew fat
MA throughout the summer, and took a new wife, and a new *boom*
[595] for his brother at a cost of 10,500 rupees; and I heard no complaints from the merchants.

K As far as I was able to discover, half the gross earnings went to
MA the ship; this was the merchant's share. The cost of the food for
505 the round voyage (which was not much, for all hands lived very
465 simply and fishing lines were the most important equipment in
501 what passed for her storeroom) was deducted from the other half,
439 and the remainder was then divided by shares arranged strictly in accordance with the accepted value of each man's rating aboard. The sailor's share on the voyage which I made was reported to be 135 rupees (about $40), whereof 35 rupees had been advanced. This was little enough for such a long voyage, and though they worked hard at all sorts of things and were ready for any kind of business, I doubt whether a sailor's earnings from other sources amounted to more than 20 or 30 rupees, clear.

K I heard of dhows from Kuwait that season which were dis-
MA tributing less than 100 rupees; according to the Kuwaiti, who
465 had no high opinion of them, the Suri rarely paid out more than
505 fifty. To a sailor whose only home was the sand of the *suq* and
181 his bed the cloak around him, whose wants were few and whose paradise was assured, even 50 rupees may be a vast sum of money. There was, at any rate, contentment throughout the Arab shipping industry as I knew it, and the quiet philosophy I learned among the simple seamen was of great help to me in the days of the long-drawn war which was soon to follow.

● 181

/For data concerning the Arab dhow sailor and his view of life see full text in category 116. /

From the proceeds of the season's catch one-fifth is 427
turned over to the owner of the boat as rent for its use, 465
and from the remainder the season's expenses for food, 228
water and the like are deducted. The money that is left 466
represents the profits of the season. Each diver receives
an equal share of this; each assistant two-thirds of a
share. The captain, who has done no diving but has
superintended the season's campaign, receives a diver's
share, as does the sheikh of the town in some instances,
this being the government tax upon the industry.

This seems a good system. In theory it could hardly
be improved, but in practice it could hardly be worse.
The divers cannot read or write, so they have no way [212]
of knowing whether or not their accounts are correctly
kept. They may not assist in, or even witness, the process of sale, so they have not the slightest control over the
captain, nor any means of protecting themselves from
dishonesty on his part. The captain himself is between
the upper and nether millstones, for the only way he can
rent a diving boat is by promising to sell his pearls to the
owner of that boat, and from this owner he may receive
not over fifty per cent of their market price. Even this
reduced price the divers do not receive undiminished, for
the captain enriches himself privately at their expense
before the sale is reported. Then as if matters were not
bad enough, almost without exception the men are in
their captain's debt, and remain so throughout their lives.

The fact that nearly all the divers are in debt is partly 426
their own fault. When a man begins to dive, he could [465]
avoid borrowing money if he were at all determined to do
so. The diving season lasts only five months at the outside, and the season's proceeds may be sufficient to live 466
on for the whole year with economy and care. If they

M
228 such a number of chronic running ears. The lungs are
164 often affected, and all along the diving coast pulmonary
tuberculosis is common. This is not remarkable when we
know that in the opening days of the season the men frequently
dive in water that is so cold that they spit blood.
Many return from their summer of semi-starvation and
unsuitable diet of rice and dates with their gums sore and
bleeding from scurvy.

Living conditions in the community* are what might be
M expected. Disease is common. The death rate is high.
511 Poverty is universal. In good years the standard of life
is none too high. In bad years it is reduced almost to
the starvation point. During a hard year the food of the
divers is poor in quality and scanty in amount almost to
the degree of partial starvation. They usually live in
date-stick huts, and in the winter must frequently shiver
in unwarmed houses because they have no money for
fuel.

M In such communities there is little or no interest in
871 education. A diver has reason enough, one might suppose,
212 for wanting to know how to read and write and
keep his own accounts, but it is rare that one of them
knows as much as that, and apparently it is equally unusual
M to find one who is trying to educate his children so
[868] that they may escape the slavery that binds him. The
boys are frequently taken out to learn pearl diving while
B they are still under twelve. In Bahrein the American
571 Mission has tried for many years to develop educational
185 work of an elementary sort, but has found it practically
658 impossible because there is no demand for such things.
The considerable Persian community in the city has made
efforts from time to time to establish educational work
for its own boys. The Persian schools exist for a little

*[of pearl divers -- Analyst]

estimate of the number of boats operating in 1946 would be as follows: 228 464 178

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Kuwait	100
Darin, Qatif, Jubail	30
Trucial coast, Qatar, and Persian ports	250
	530

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

[18] Ibid., p. 143

384 MARINE INDUSTRIES OF EASTERN ARABIA

RICHARD LeBARON BOWEN, JR.

361 226 503 315 THE Persian Gulf coast of Saudi Arabia is desolate in the extreme: in many places one travels along the beach for dozens of miles without seeing a living soul. But there is a sprinkling of old coastal towns, whose inhabitants for the most part gain their livelihood from the sea. Among them are Jubail, long a port of entry for the capital city of Riyadh, 235 miles inland; Dammam, seaport for the Qatif and Safwa oases (a deep-water pier has recently been constructed at Dammam); Al Khobar and Oqair, ports for the great oasis of Hofuf (Hasa). To these have been added of late years Arabian American Oil Company settlements at Ras al Mish'ab (a construction camp and port facilities), Nejma (a refinery and camp), and Ras Tanura (pipeline terminus and cargo wharf).

FISHING

226 262 Foremost among the marine activities of the older coastal towns is fishing. Although there are far fewer species of fish in the Persian Gulf than in the Indian Ocean, they are present in greater numbers, particularly the porgies, than one might expect in so warm a body of salt water, and fish form a welcome addition to the diet in a land where food is pitifully scarce.

226 [357 504] Fishing methods range from a simple hand line to large and complicated fishweirs. On land the hand line is used mainly by small boys, who, like the small fry of any other country, enjoy fishing. Since there is an almost complete lack of jetties and piers, these young fishermen have to stand on the beach and heave their weighted lines as far as they can (Fig. 2). When the fish are running, these youngsters line the shores, and their catch is sometimes sizable. Hand lines are indispensable on every dhow and are thrown out as soon as the boat is in open water.

A more advanced type of fishing uses the throw net—a circular net about 16 feet in diameter made of quarter-inch-mesh netting. The periphery is weighted with small lead weights, then doubled back toward the center and tied at 12-inch intervals to form a continuous pocket some six inches deep. The fisherman walks in knee-deep water at low tide, holding his net —which he has folded and gathered with the perfection of a parachutist—

▶ DR. BOWEN is a chemical engineer now resident in Providence, R. I. His field experience in Arabia includes three years with the Arabian American Oil Company (1945 to 1947) and some months as technical and engineering adviser to the Arabian expedition of the American Foundation for the Study of Man (1950).

[131
361]

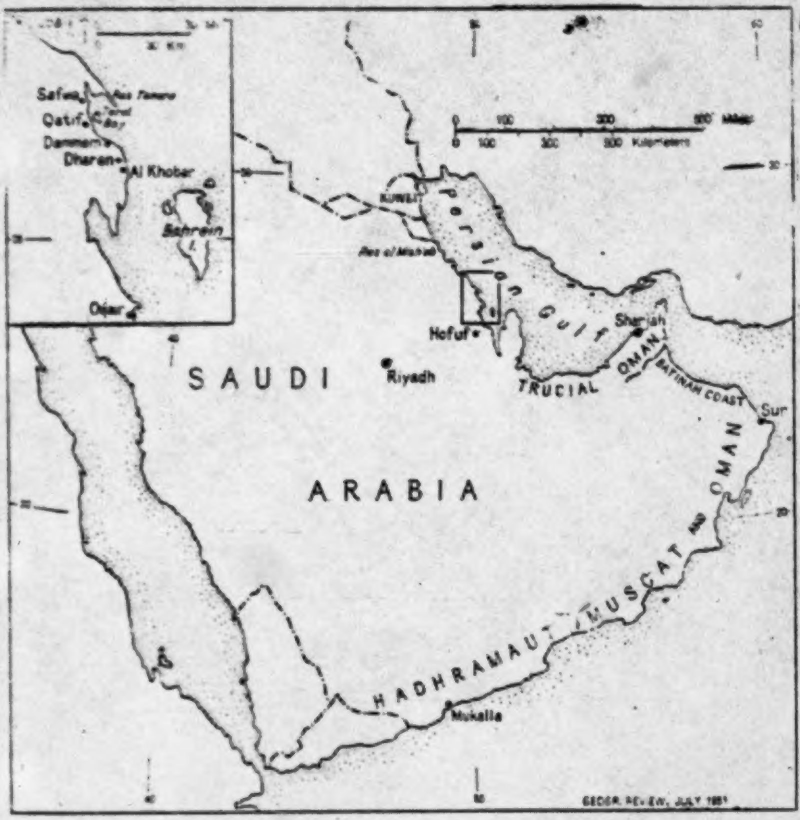
Safwa
Ras Tanura
Qatif
Tarut Bay
Dammam
Dharan
Al Khobar
Bahrein I.
Ojair
Kuwait
Persian Gulf
Ras al Mishab
Hofuf
Riyadh
SAUDI
ARABIA
TRUCIAL
OMAN
Sharjah
BATINAH COAST
Sur
MUSCAT AND OMAN
HADHRAMAUT
Mukalla
0 100 200 300 Miles
0 100 200 300 400 Kilometers
GEOGR. REVIEW, JULY 1951

FIG. 1—Location map. Inset shows places mentioned in the text.

with both hands and his teeth. When [illegible] spots a school of fish, he flings the 226 net into the air with one arm (much like a man sowing seed) and a snap of his head. The net opens out flat and drops on the water; the weights carry the outside to the bottom faster than the center. The fisherman then picks up the net by the center, and any fish under it immediately swim toward the edge and are trapped in the pocket. He keeps pulling the center through one hand and folding it up, and when he has finally gathered in the whole net, he carefully removes the fish flopping around in the pocket, puts them in a palm-leaf basket, and starts all over again.

The Arabs also use wire and palm-leaf basket fishtraps (Fig. 4). These 226 are oval-shaped, from two to five feet long, with a cone-shaped entrance 262 on each end through which the fish cannot squeeze out. The traps are usually baited with cuttlefish, forbidden to the Arabs by a strict interpretation of

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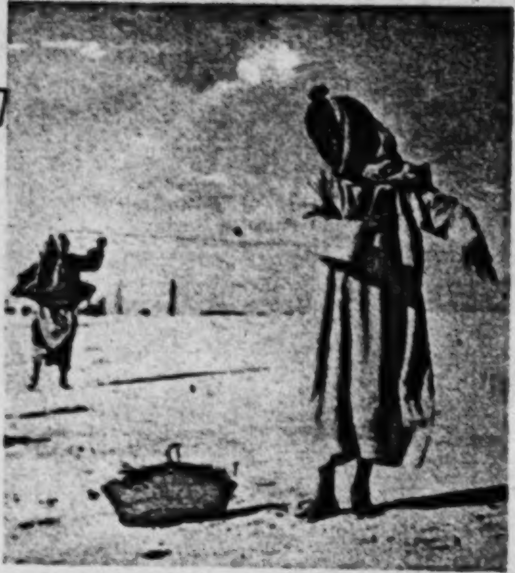

FIG. 2—Arab boys fishing with hand lines. When the fish are running, small boys often line the shore by the dozen.

the Koran, but a particularly juicy delicacy from a fish's point of view. The Arabs dot the shallow water with these basket traps at points where feeding appears good; the edges of small coral reefs are favorite spots.

The Arab fisherman never marks his traps with floats as the American lobster fisherman does, because he fears they will be plundered; he must remember the location of each trap. Where he cannot see the bottom, he suspends a float several feet below low-tide level. To tend his traps, this Arab rows his small boat up and down at low tide until he spies his trap or float and hooks it with a pole; in shallow water he sometimes dives for the trap. I once watched a crew of three fishermen off Ras Tanura; they seemed to know the approximate location of each trap in the 30 feet of water, but they spent as much as a quarter of an hour peering into the water to find each submerged float. These men used the largest wire traps I saw in the Persian Gulf, and their catch at times was astounding.

The Arabs on the east coast of Arabia seldom use seines, though on Bahrein Island I saw several drying in the sun. However, large communal seines have apparently been used on the Batinah Coast of Oman; for Thomas[1] relates that "there, a hundred fishermen were hauling ashore a communally owned net, the vast extent of which was marked by distant bobbing floats . . . In contrast, a lone fisherman, far out, monotonously cast his circular hand-net." On the Hadhramaut coast of South Arabia the fishermen also use large seines. At Mukalla I saw a two-and-a-half-inch-mesh net 190 feet long and 20 feet wide; a narrower net had a mesh of five inches. These wide-mesh nets are used for sharks. Farther east on this coast, at Jazir Bay, the fishermen set their seines by swimming out to sea on inflated sheepskins!

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[1] Bertram Thomas: *Alarms and Excursions in Arabia*, London, 1931, p. 156.

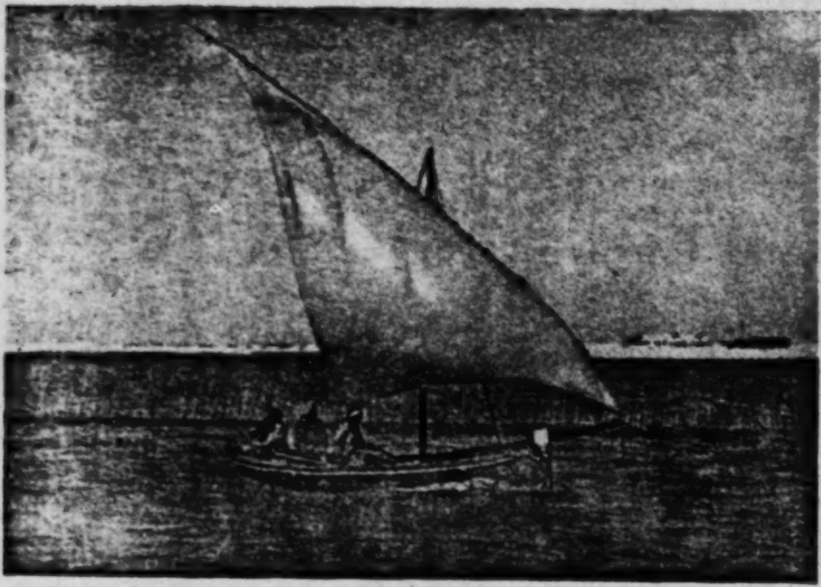

FIG. 3—Arab fishing dhow (*jalbut*) typical of eastern Arabia. The outside wing of a large funnel-type fishweir may be seen directly behind the boat.

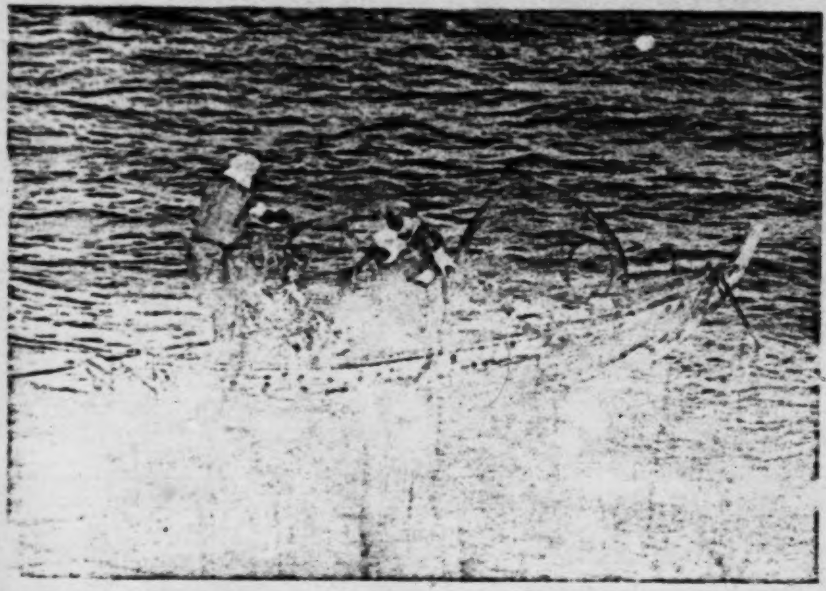

FIG. 4—Fishermen tending their basket fishtraps from a *bellam* in 30 feet of water. These traps are marked with floats suspended just below low-tide mark.

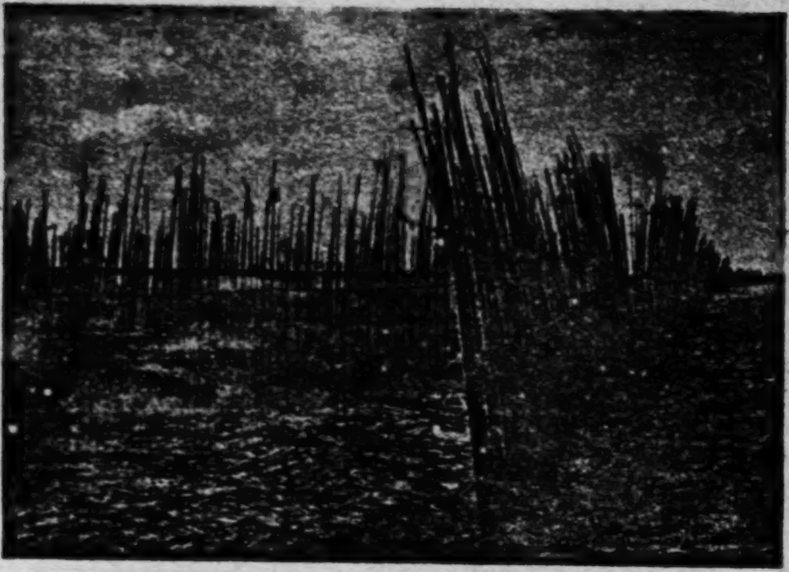

FIG. 5—Outside wing of a funnel-type fishweir showing the inside of the secondary enclosure at the left. The primary enclosure, or "head," of the trap is outside of the photograph.

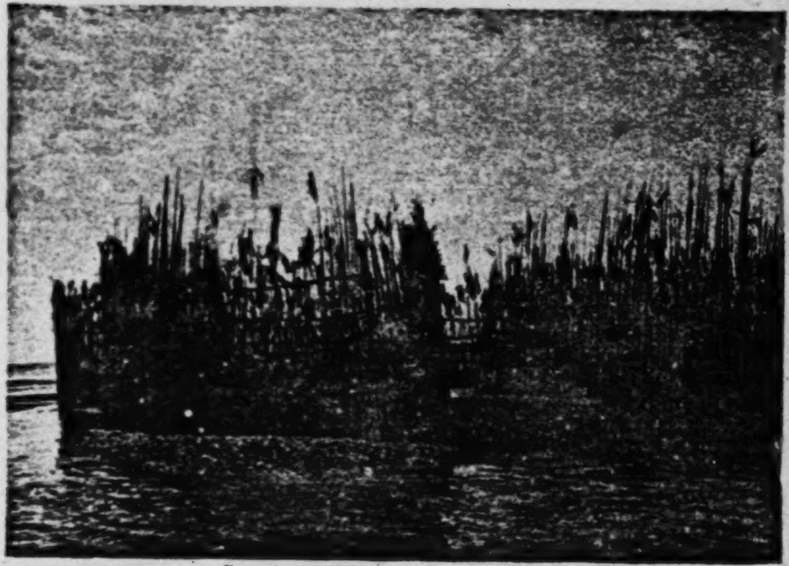

FIG. 6—Entrance to the secondary enclosure of a spear-type fishweir; the "head" is at the extreme left, the leader running to shore at right. The trap is almost completely submerged at high tide.

FISHWEIRS

[285] 226 The largest catch of fish on the Persian Gulf coast of Saudi Arabia and Bahrein Island comes from huge weirs, made from the stems of palm trees. The Arabs build these fencelike traps by driving a steel bar into the mucky bottom and inserting a palm stem into the hole as they withdraw the bar (Fig. 13); the stems are spaced close enough so that no fish can pass through and are tied together. There are two types of weir: a funnel type and a spear type.

[133] In the Persian Gulf the maximum tidal drop is about eight feet. The fishweirs are built so that at low tide there is only a few feet of water on the offshore end of the weir. Where the ebbing tide sets up a definite current, the funnel type (Fig. 7) is used, placed so that the current washes through the trap. The fish carried along in the current are forced through the funnel into the stockade of the weir, the entrance of which is out of water at low tide. These weirs are usually built with the central axis parallel to the shore; however, in Tarut Bay many are not near any shore but are set across tidal currents in shallows. Sometimes several traps are set in a row. It is not exceptional for the ebb current in Tarut Bay to reach three knots in some places.

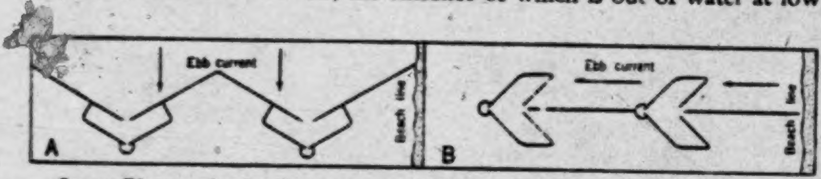

FIG. 7—Diagrams showing the two types of fishweir. The funnel type (A) catches fish that are washed into the enclosure on an ebbing tide. The spear type (B) is most effective in the case of fish moving parallel to the shore, since the ebbing tide causes only a slight current. Both types are found either singly or in a row, as illustrated.

Where the tidal ebb sets up merely a slight motion, the spear type of weir (Fig. 7) is used; the axis is oriented at right angles to the shore. As with the funnel type, several weirs are sometimes set in a row. Most of the fishweirs on Bahrein Island are of this type. The fish swim inshore on a flooding tide and out on an ebbing tide, and thus tend to work into the weirs; these traps are most effective in catching schools of fish swimming parallel to the shore. This type of weir is less effective than the funnel type, because its action is less positive.

Thus when the tide has gone out, the fisherman has a stockade of fish. He enters this stockade, or "head" of the weir, which is 10 to 15 feet in diameter (Fig. 8), with a net hitched to two 3-foot palm-stem poles. Holding

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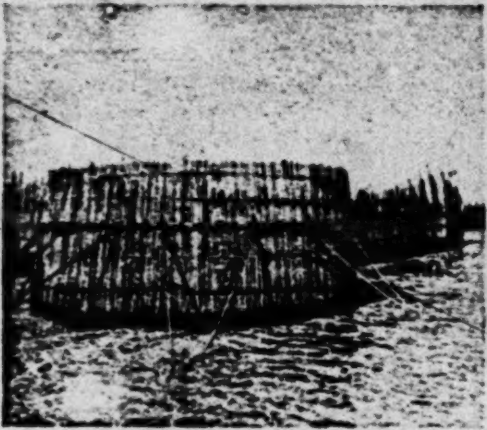

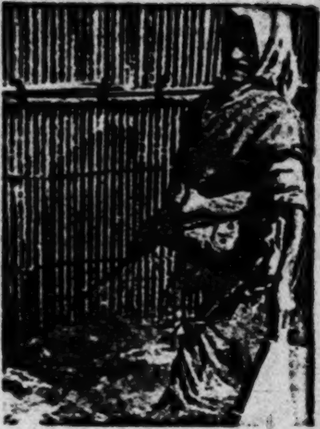

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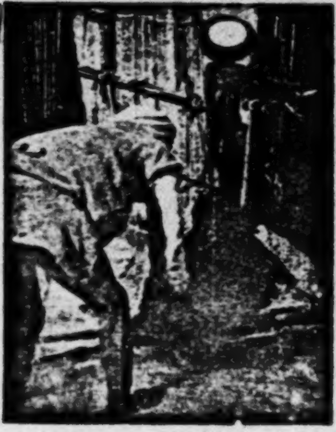

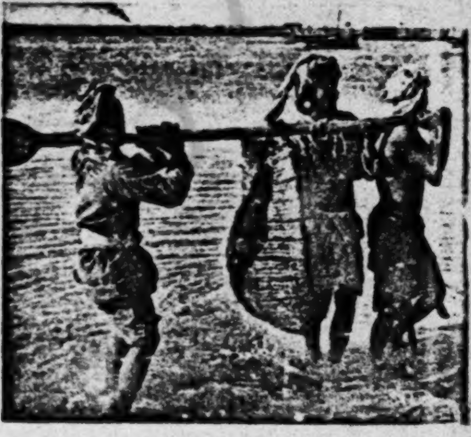

FIG. 8 (upper left)—The stockade, or primary enclosure, of a fishweir, encircled with rope and lashed down to prevent large fish from breaking out.

FIG. 9 (upper right)—Working around the edges of the enclosure with a fine-mesh hand net. Note the long burlap shirt, frequently worn by fishermen in colder weather.

FIG. 10 (lower left)—Transferring the fish from the hand net into a palm-leaf basket. Note the narrow entrance into the primary enclosure formed by the wings of the secondary enclosure; this entrance becomes narrower toward the bottom.

FIG. 11 (lower right)—Carrying the basket of fish ashore, slung from an oar. Fishweirs in the background.

226 one in each hand (Fig. 9), he works the net around the edge of the stockade and empties the fish into palm-leaf baskets (Figs. 10 and 11). Most of the fish weigh less than a pound, but it is not unusual for a weir to yield many hundreds of pounds of fish in a tide change, though sometimes only enough are caught to feed the fishermen. The fish are usually sorted into two or three grades and are often sold on the spot. Several times I saw sharks as large as six feet trapped in the stockade; extracting these monsters was a delicate task. Most of the cuttlefish used as bait in the basket fishtraps come from these palm-stem fishweirs.

There seems to be a direct correlation between the amount of fish caught in a weir and the wind velocity, at least on the Ras Tanura peninsula. The Arabs can estimate their catch simply from the atmospheric conditions prevailing before low tide: if the *shamal*, the strong north wind, has been blowing, the haul is sure to be good.

I never saw the effect of the wind fail. In the fall jumbo shrimp, equal to any found in the Gulf of Mexico, are caught in these weirs. If there had been little wind, the catch would be small, but if the wind had been considerable, there were sure to be several dozen nice shrimp. The 10 weirs on the Tarut Bay side of Ras Tanura yielded at the most only several dozen shrimp, most of which came from two funnel weirs; the shrimp that appeared in local markets in large quantities came from the weirs on the flats
[251] around Qatif. The shrimp in Arabian markets is sun-dried, so that it can be stored and sold in any season.

As a rule, the men who work a fishweir get half the profits, and the owner gets the other half. The profits are figured by deducting from the gross return the cost of the workers' food and of the material required to maintain the weir. If a trap fails to produce, the owner sometimes supplies the tenders with cash, which must be repaid later.

In summer the daylight low tide in the Persian Gulf at Ras Tanura is about two feet higher than the minimum, in February. The water does not get low enough in the weirs to trap fish effectively, and the summer catch
[228 is therefore poor. Usually trap tenders are assigned to pearl diving and rock
464] mining, possible only in the warmer months; one man is left to collect the small catch and keep the weir in condition. When Ramadan, the great Moslem fast month, falls in summer, the Arabs on Tarut Bay allow their fishweirs to fall into disrepair. It is surprising how fast a weir will disintegrate under even the slight wave action in a sheltered area such as Tarut Bay. In 1945 there were several strong shamals during Ramadan (then the last two weeks in July and the first two in August), which, coupled with the

[Text continued on p. 393]

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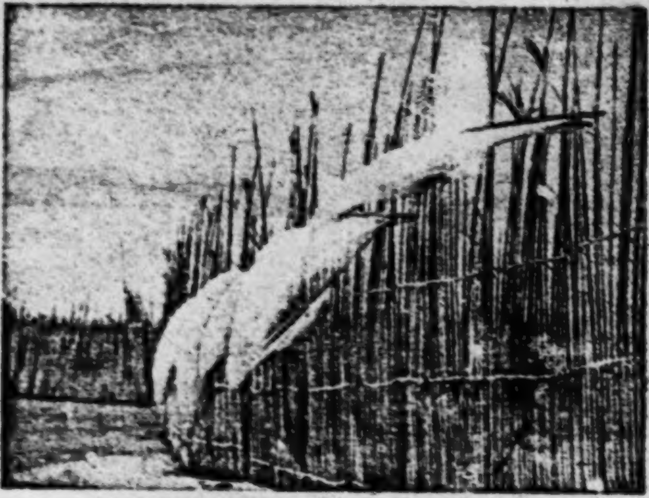

FIG. 12—Hand nets drying on the inside wing of a funnel-type weir.

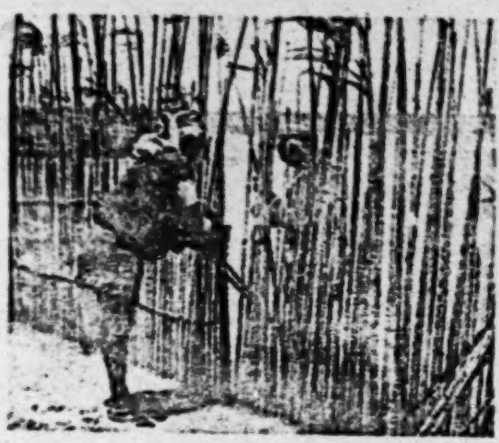

FIG. 13—Mending the weir. Arab in foreground is making a hole with a steel bar, into which a palm stem will be inserted by the other Arab.

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut
Bay side of the Ras Tanura peninsula. All during the fishing season constant
maintenance is necessary (Fig. 13).

Because of its shoal water, Tarut Bay is the only place along the Persian
226 Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
suits against the Arabian American Oil Company, asserting that the change
691 in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
422 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir
[435] rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few
Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras
Tanura area the sale was an economic blow, for much of the fish supplied to
Hasa Province came from the Ras Tanura traps.

Rock Mining

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[2] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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113 [2] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen,
501 Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually
jalbuts (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shewes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

361 465 a few scattered Bedouin tribes. The Kuwait Oil Company is now operating in high gear, and has apparently offered so many opportunities for natives that *nakhodas* (captains) have difficulty in getting men to sail their ships at the wages they can offer. Sailors never get any regular wages on a dhow, receiving a share of the earnings of the ship only after the voyage is over. Many sailors have apparently found that it is a comfortable feeling to receive a regular wage every week! It is too early yet to tell whether or not the change is permanent.

439 505 There has also been a noticeable fall-off in date-bearing Arab dhows sailing to India, but apparently for a different reason. Vaidya[15] states that during the 1943-1944 season, presumably for the first time, sixty to seventy per cent of the Arab fleet that usually brought dates failed to appear because of Arab restrictions on the export of wet dates and because of the high prevailing prices of the dates. Thus, this case is not allied to the present situation prevailing in Kuwait, as during the 1943-1944 season dates presumably were not shipped to India by any other means.

However, even if Kuwait is unable to put its *bhums* to sea, the date crop in the future will still probably be carried out of the Persian Gulf in dhows as usual; it will take time to attain a balance again. Whether the port of Sur rises to the challenge or whether some Persian port takes the trade remains to be seen. The Suris from Oman are logical successors to Kuwait, for in times past they have been noted for taking cargoes at lower rates than the Kuwaiti or any other mariners could afford to, and they have a long maritime history.

It is interesting to note that oil activities in other areas in the Persian Gulf have drastically affected the marine activities of other coastal towns. Over ten years ago, the Saudi Arabian ports of Jubail, Qatif, and Darin used to send out over a hundred dhows yearly to join the Persian Gulf pearl fisheries. Now if they send out several dozen dhows it is news; the Arabs who used to dive for pearls now have steady jobs with the Arabian American Oil Company. The same has happened on Bahrein Island. The Bahrein *nakhodas* are no longer able to find a multitude of divers who will accept the wage the *nakhodas* are able to offer; thus the Bahrein pearl fleet is only a shadow of what it was a quarter of a century ago.

439 226 Most but not all Arab dhows load dates first; however, many Omani dhows bring cargoes of dried fish and fish oil, for fishing is particularly good in the waters off Oman, and sharks and large tuna are caught in considerable amounts, both for home consumption and export. Sometimes, however, the Omanis may set out for Africa empty, or with only a partial

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[15] K. B. Vaidya, op. cit., p. 207.

cargo of fish if the local supply is not sufficient, and fish their way down 439
the Arabian and African coast, selling fish wherever they can. Then they 226
do the same thing on the way back. Mukalla is a favorite stopping place
on the way down to Africa; I have seen dozens of *bedans* from Sur come
into Mukalla and lay out their catch of shark or tuna on the beach to dry
while they beached their dhows and put a coat of shark liver oil on their
hulls (see Plate 18—top and bottom). Shark is a favorite Arab food; the [262]
flesh is cut off in strips or slabs and dried, while the liver is saved for its
oil. The Arabs have little use for the tails or fins of the shark, but they
are all meticulously saved and eventually find their way to China via
India.

Thus these fish-bearing dhows from Oman start their trading venture
from their home port, carrying a product of the port, and never carry
other cargo; they trade fish from Sur to Zanzibar and back. For this trade
they apparently always use the primitive *bedan*, usually ranging from fifty [501]
to sixty feet in length. The Suris export dates from Oman, or go to Basra
for a cargo; when carrying dates they use large *sambuks* and *baghlas*.

In contrast to Arab and Persian ships which sail along the coasts the 439
whole way, whether going to India or Africa, Indian vessels usually sail 487
straight from India across the ocean for South Arabia or Africa with consignments of goods from Indian exporters at specific ports. Only rarely do they carry dates; their usual cargo consists of the products of India. From the Malabar coast they may carry coir rope stuffs, coir matting, teakwood, teak dugout canoes, coconuts, spices, cement, bricks, or tiles, while from Bombay they may pick up cotton piecegoods, groundnut oil, or tea. Most of the Indian ships that voyage to Arabia or Africa come from the Gulf of Cutch; few if any craft from Bombay or the Malabar coast carry this trade today.

In vivid contrast to the Arab date cargo and Indian cargo, which is usually on consignment, the replacement cargo for the rest of the voyage for the average Arab dhow is purchased by the *nakhoda* from the profit made on the date freight, for sale at the best market. After its date cargo has been discharged, the dhow becomes a trader in every connotation of the word, picking up and selling cargoes as she coasts south along the South Arabian and East African coast.

Sometimes the *nakhoda* may pick up a small cargo of partially spoiled dates to unload on the Africans; these the crew may wrap meticulously in fancy wrappers. At Aden the dhow may take on salt, sugar (from Java), rice (from Rangoon), canned goods, hardware, kerosene, or cotton goods and prints, and from the Hadhramaut coast the cargo may be dried shark

White radishes	100	5	262
Lemons	40	5	
Other fresh/vegetables	400	15	
10 live sheep	1100	40	
15 live sheep and goats	1500	80	
	Total Rs.	1502	

It should be noted that rice constitutes one-third of the cost. The other great staple at sea—fish—is not listed accurately, as most of it is caught fresh; probably between two thousand and three thousand pounds of fresh fish was eaten. It should also be noted that no charge occurs for water. The dhow will take a tank of bad water rather than pay for it.

The Arab dhow, regardless of its size, always has a fish-line overboard, 226 and it is not uncommon to see half a dozen lines overboard. I have caught many fish myself trailing a line from a dhow in the Persian Gulf. Villiers[88] states that fishing off the whole African coast is particularly good and that it is not uncommon for the many lines trailed from a Kuwait *bhum* to net twenty to thirty large fish a day. The fish not eaten are cleaned by [251] splitting, are pounded in salt, and then hung in the sun to dry; the sailors never bother to scale the fish.

The galley on an Arab dhow is simply a spot on the deck. The stove 252 consists simply of an open-sided box with some sand and cooking stones 501 on the bottom (see Plate 21—top left). The larger the dhow the larger the fire-box. The cook cooks everything here with wood fires of palm wood, brush, or driftwood.

On dhows of South Arabia and the Gulf of Aden ports there is also a bread oven. I have never seen these on dhows from the Persian Gulf or Gulf of Oman. The oven consists of a wide-mouthed pot perhaps fifteen or eighteen inches in diameter; this pot is put inside a barrel about two and one-half or three feet in diameter and the space around the pot is filled with sand (see Plate 21—top right). The barrel is firmly lashed together and then is usually securely lashed to the deck. To bake bread, the cook builds a fire in the bottom of the pot and allows it to burn down to the coals. Then he takes a flat piece of dough like a large pancake and pastes this on the inside of the pot; the heat in the walls of the pot and the coals bake the bread. This is the Arab *khubuz*, one of the staples of 262 the Arab at sea as well as on land.

VI

It is difficult for one totally unfamiliar with the Arab East to understand 426 the economic system of the Arabs. The tenets of Islam prevent any

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[88] A. Villiers, SS, p. 150.

Bahrain MZ2
Maritime Arabs MK2

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971 time and then break up and disappear. Few care whether
185 they live or die. One of the Bahrein sheikhs made a visit
658 to England at the invitation of the British Government about three years ago. On his return he collected nearly a hundred thousand dollars for the founding of a free public school. A large building was projected, but by inefficiency and carelessness, if not worse, the entire sum was spent on the first story of that building. Now the project languishes and seems about to die, purely because nobody cares whether it lives or not. Even Koran schools are few in number and poor in quality. There is nothing like the diffusion of education that prevails in the inland
M desert towns.

463 Although the vast majority of the people in these towns
226 are pearl divers, there are a few fishermen and a smaller number who gain a precarious livelihood as sailors in Arab sailing ships. There are abundant supplies of fish in all these harbors, but fishing is a very unpopular occupation. It is hard, disagreeable work, and the men must frequently be out in the little boats all night. When times are good and the captain's allowances liberal, nobody is willing to fish. When the pearl catch is bad or the price low every one feels poor, many eke out their small resources by this additional work, and fish becomes plenti-
M ful and cheap.

505 There were once many sea-going sail boats engaged in carrying various cargoes from port to port in this district, for the Arabs are bold navigators and can travel in these ships from India to the Suez Canal. They still bring goods from the various East African ports to Arabia, and rarely fail to make these long trips successfully, but the work is hard, and since the steamers of the "Ingleez" have absorbed more and more of the better

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Maritime Arabs MK2

[For information on boats and boat equipment and on the pearling industry, see MI1 Kuwait, 1: Dickson, Category 116, pp. 473 to 496.]

THE PEARL FISHERIES OF THE PERSIAN GULF

Richard LeBaron Bowen, Jr.

● 228 THE MOST COLORFUL and widely publicized marine activity of the Persian Gulf is pearl fishing. Since time immemorial the Persian Gulf has been noted for its pearl beds, and Bahrein Island has always been famous for the best pearls. Virtually every ancient and early geographer or traveler writing about the Persian Gulf mentioned pearls and Bahrein Island. An ancient cuneiform tablet found at Ur of the Chaldees, and dated about 2000 B.C., refers to "a parcel of fish-eyes" from Dilmun; some scholars have interpreted this to mean pearls from Bahrein Island. Pliny, writing in the first century A.D., states that Tylos (the classical name for Bahrein Island) "is famous for the vast number of its pearls." *The Periplus of the Erythraean Sea,* written by a Greek sailor about 60 A.D., mentions the Persian Gulf, "where there are many pearl fisheries." An Arab writing in 1050 A.D. states that "pearl fishing is carried on in the sea of Bahrein." In 1583 Ralph Fitch, an English merchant, visited the then famous island of Hormuz in the Persian Gulf and stated that there were "great stores of pearls which came from the Isle of Baharim, and are the best pearls of all others." Such a continuous record of fame is certainly extraordinary. If the "parcel of fish-eyes" sent to the Babylonians was actually pearls, it recorded the start of a continuous 4,000 years of testimony as to the quality of the Persian Gulf product.

000 The factors governing the value of a pearl are multitudinous

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114 ◆ Richard LeBaron Bowen, Jr. is a professional chemical engineer with an intense interest in the Arabian Peninsula. He worked for the Arabian American Oil Company from 1945 to 1947 in Saudi Arabia. In the winter of 1950, he was Technical and Engineering Adviser to the American Foundation for the Study of Man Arabian Expedition, which conducted archeological excavations in South Arabia. Dr. Bowen has already published two books on his scientific researches in Saudi Arabia: *Arab Dhows of Eastern Arabia,* and *The Arabian Necropolis of Ain Jawan.* He has additional articles on dhows and Persian gulf marine industries appearing this year.

2s Bowen C-4 (1945-1947) 1951 MX2 Maritime Arabs MX2

0 00 and set by arbitrary standards. A first grade pearl should have a perfect "skin," i.e., be free from flaws and specks, and should have a fine "orient," that is, a delicate texture of translucent pink or cream color with an irridescent luster. It is difficult to say whether the size, shape, or color of a pearl is the more important. Other qualities being equal, a perfectly symmetrical pearl is more desirable than a pear-shaped or a flat one. There are pearls of all colors —white, black, gray, green, yellow, gold, and pink. The size of the pearl is important only in combination with a desirable color and shape. Luster is probably the most important characteristic of a first-class pearl; other qualities can be more or less lacking if the pearl has good luster or depth. The most perfect pearl in existence is said to be one in the Zosima Museum in Moscow, known as "La Pellegrina," weighing 28 carats. The largest known pearl is an irregularly shaped one in the Victoria and Albert Museum, having a circumference of 4.5 inches.

The value of a really rare pearl increases by leaps and bounds from purchaser to purchaser. A single example is a Persian Gulf pearl purchased by Barbara Hutton for $75,000; the pearl originally sold for $30,000. It is not necessarily on the spot where the pearl is produced that it is most cheaply procured, and if procured, of the finest quality. Arabs in the Persian Gulf know that the Best Gulf pearls may be purchased most cheaply in India. Peddlers may be found in most towns on the Persian Gulf with necklaces of Gulf pearls for sale; however, these have usually been imported from Bombay.

VALUE OF PERSIAN GULF PEARLS

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The annual value of the Persian Gulf pearl fisheries is difficult to estimate exactly, as there are no published figures and the season's crop is not shipped out through any single port. Figures published by some authors are actually only the value of the pearls passing through Bahrein Island. However, as close to 90 percent of the Gulf pearls do pass through Bahrein, these figures give a rough estimate. The earliest figure known dates back to the early 19th century; Wilson stated in 1833 that the value of the pearls produced at Bahrein amounted to from £200,000 to £240,000, while the value of the whole fisheries was about

£300,000.[1] Wellsted stated that in 1835 the total value was 226
£400,000.[2] Zwemer stated that the value of pearls shipped from 439
Bahrein in 1896 was £303,941.[3]

Cox gives the value of pearls exported in 1925 as £220,000 from Bahrein and £9,000 from Lingeh in Iran, and for 1926 as £192,000 from Bahrein, £11,000 from Kuwait, and £5,200 from Lingeh (a total of about £208,000 for 1926); Cox further states that the true value was probably ten times these figures, for reasons he fails to clarify.[4] However, Thornburg has accepted this last statement of Cox's as a fact and has arrived at a figure of $10 million for the value of the Bahrein fisheries in 1926,[5] a figure that is unreasonably high. Thornburg estimates that in the years immediately following World War II the value of the Bahrein pearl fisheries was about $250,000; Kruegar states that in 1949 the value of the Bahrein pearl fisheries amounted to $200,000.[6] Rihani gives figures for the whole Gulf which amount to about $15 million,[7] the most absurd value published.

A summary of the more reliable figures would seem to be as follows:

1830's	$1,500,000
1835	2,000,000
1896	1,500,000
1925	1,200,000
1926	1,000,000
1946	250,000
1949	200,000

As can be seen from the above table, the value of the fisheries 228
dropped to only a fraction of its previous value after the world 439
depression of the thirties. It should also be pointed out that due to
world inflation the figure of $200,000 for 1949 represents less than 435
$100,000 on 1926 monetary standards. However, while the depression dealt the Gulf pearl fisheries a devastating blow, its

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[1] D. Wilson, "Memorandum Respecting the Pearl Fisheries in the Persian Gulf," *Geographical Journal*, III (1883), p. 284.

[2] James R. Wellsted, *Travels in Arabia* (London, 1838), p. 264.

[3] Samuel M. Zwemer, *Cradle of Islam* (New York, 1900), p. 100.

[4] Percy Z. Cox, "Persian Gulf," *Encyclopedia Britannica* (Chicago, 1946), vol. 17, p. 605.

[5] Max Thornburg, "Bahrein," *Encyclopedia Americana* (New York, 1949), vol. 3, p. 48a.

[6] H. C. Kruegar, "Bahrein," *Collier's Encyclopedia*, II (New York, 1949), p. 668.

[7] Ameen Rihani, *Around the Coasts of Arabia* (London, 1930), p. 275.

228 continued decline cannot be laid at its door. Japanese cultured
439 pearls first started to appear on the market in quantities in the
435 twenties just before the depression. As time has gone on the competition they offered has tended to become less and less, but on the other hand, the world demand for this gem has reached an all-time low, mainly because of the effect of the cultured pearl.

228 The introduction of cultured pearls and artificial pearls alike
435 has had far-reaching effects on the natural pearl market. While they do not compete insofar as price is concerned when they are recognized as cultured, it takes an expert to distinguish them. Thus, the net effect of cultured pearls, and even more so of the expertly fabricated synthetic pearls, has been to cheapen the pearl as a precious gem in the eyes of those who wear them. There are actually some women who prefer cultured pearls, which are usually more uniform. As a result, natural Gulf pearls do not bring a tenth of what they did a quarter of a century ago at Bahrein.[7]

228 It is a strange fact that even though a cultured pearl is worth only a few percent of the value of real pearls, there are few pearl merchants in the Persian Gulf who can tell a good cultured pearl from the Gulf pearl without destroying the two in the effort.[8] Radiography (x-ray), x-ray diffraction, fluorescence under x-ray radiation, or specific gravity determinations, alone or in various combinations, may be used to detect cultured pearls, but these physical tests are not used by the Arabs for obvious reasons.

228 One might ask why cultured pearls have not been "introduced"
656 into the Persian Gulf pearl market by divers, captains, or merchants. The Arab will tell you that this is improbable. The importation of cultured pearls into the Persian Gulf is prohibited, and in fact carries a severe penalty. The oysters are opened in sight of the divers, so they all know how many exceptional pearls the *nakhoda* (captain) receives and thus what exceptional pearls

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[8] One of the world's leading authorities on the differentiation of cultured and natural pearls by their physical properties, Dr. A. E. Alexander, visited the Persian Gulf in 1947 to study the pearl fisheries and took with him a number of fine cultured pearls which he showed to a group of about thirty Bahrein pearl dealers. These Arabs had never seen a cultured pearl, whose importation is normally prohibited, and were astounded at its quality.

the owner in turn receives. Such fraud as the introduction of 228
cultured pearls, if detected, would bring out the headman's ax, 656
for Arab laws are severe in this respect. But as there are always people willing to make a dishonest dollar or rupee—and the Arabs are certainly no exception—it is inconceivable that cultured pearls, carefully chosen for their similarity to Gulf pearls, have not at times been smuggled into the Persian Gulf. If the Arab merchants cannot detect them, there are probably few experts who could without the aid of delicate and elaborate electrical instruments.

OYSTERS AND OYSTER BEDS

Arab lore in the Gulf relates that the young shell-less oysters 325
come to the surface when it is raining, or when the moon is full. The raindrop is the father of a good pearl and the oyster the mother, while the moon produces luster. A poor season is attributed by many to a shortage of rain. Al-Qazwini, author of *The Wonders of Creation,* gives a different version: the north wind carries a mist containing a viscid substance similar to mercury from the Caspian Sea to the Gulf; the oysters draw in this substance, a large drop forming a large pearl.[*] But every Arab has his own explanation of the phenomenon, and believes that the true scientific explanation is just fantasy.

According to O'Shea, three types of pearl oysters are found in 228
the Persian Gulf, known to the Arabs as *mahharah, zanniyah,* and *sadaifiyah*. The *mahharah* are the commonest, growing to two or three inches in diameter, and producing 98 percent of the pearls found in the Gulf. The *sadaifiyah* is a rare find and seldom yields pearls; it grows to great size (six to eight inches in diameter) and is often collected for its mother-of-pearl. The *zanniyah* is found in the vicinity of the Ras al-Khaymah in Oman; no details of this oyster are given. In the Red Sea two varieties are commonly found: the large oyster, known as the *balbil,* and the small, known as the *sadaf*. The pearl itself is known as *lulu* to the Arabs in the Persian Gulf, irrespective of the species of oyster from which it comes, while the Persians know it as

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[*] A. Rihani, *op. cit.*, p. 277.

229 *mawarid.* O'Shea relates that in Oman the pearl is commonly referred to as *qumash,* which is also Arabic for "material" or "goods."[18]

228 133 Pearl-bearing oysters are found in most of the Persian Gulf waters in depths varying from just below low tide to 20 fathoms. On the Persian side of the Gulf the bottom falls off rapidly to the 50-fathom maximum in the Gulf. On the Arabian side the bottom slopes off gently so that there are extensive areas within the 20-fathom limit. Thus, there are few pearl oysters on the Persian side, although fine pearls have been reported from near Kharaq Island off Bushire, and from Lingeh, but these are exceptions. However, extensive pearl beds are found along the Arabian side, stretching almost continuously for 700 miles from near Ras al-Khaymah east of Sharjah on the Trucial coast, to Ras al-Misha'ab south of Kuwait, the best beds being between 5 and 10 fathoms. The most productive are located to the north and east of Bahrein Island; this is probably why Bahrein has been the pearl center of the Persian Gulf. However, Dr. A. E. Alexander, a leading authority on pearls who visited the banks in 1947, estimates that only 35 percent of the Gulf pearls come from around Bahrein Island; the remainder comes from the Trucial Coast and from the banks near Kuwait.

228 502 825 The success of any pearling season seems to be as unpredictable as the habits of the pearl oysters themselves; the oyster beds shift periodically so that their exact location is not known until the diving starts. Sometimes the pearls are plentiful and valuable, at other times they are neither. Sometimes a bank is sterile for several seasons; then the next it may yield all the highest quality pearls. None of the banks are charted; each *nakhoda* has his own knowledge of them and his own theories. Arab experts believe that the largest, most dense, and whitest pearls come from deep water, while shallow water yields only low density pearls tinted with some color. Some of the more pessimistic Arab observers claim that the Persian Gulf fisheries never yield over two first-quality necklaces in any one season.

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[18] Raymond O'Shea, *Sand Kings of Oman* (London, 1947), p. 133.

THE PEARLING FLEETS

The bulk of the main pearling fleets sticks together, the Kuwait fleet moving down the coast while the Bahrein fleet moves 502 228 up. The pearlers of the Trucial Coast follow the banks from Ras al-Khaymah to Qatar, a straight-line distance of over 400 miles. The Oman pearlers never go above Halyl Island; they work various areas around the islands in small fleets of 10 to 20 boats, the smaller vessels usually working the grounds nearest their home ports. A pearler assumes a position on the edge of a bank so that by paying out anchor line it will drift across the bank. When the divers begin to bring up only a few oysters, the boat is allowed to drift to a new position. After it has worked completely across the banks, the crew moves it back with the sweeps, to chants and drum beating. It is here that the true skill of the *nakhoda* comes into play — to keep his ship over virgin beds. When day ends the large ships stay on the beds and the crew settles down for the night; the smaller ships usually make for a protected anchorage.

Estimating the number of dhows and men employed in the 228 Persian Gulf pearl fisheries is similar to estimating the popula- 464 tion of the Arabian Peninsula. The published figures are largely based on Arab guesswork; most of them are probably much too high. Registers of a sort are kept in every town and port along the coast sending boats to the fisheries, so that figures do actually exist. But these are not published, and an accurate count would necessitate a survey of the whole long Gulf littoral.

In one of the earliest European references to pearling in the Persian Gulf, Niebuhr states that in 1763 the inhabitants of Kuwait lived by the fishery of pearls and fishes, and were said to employ more than 800 boats in these tasks.[11] Over half a century later, Wilson estimated that the pearl fishing boats on Bahrein amounted to about 1,500.[12] In a short account of pearling on the Trucial coast, Whitelock states that in the 1840's there were said to be something over 3,000 boats in the Gulf fisheries.[13] Whitelock adds that the smallest boats had 5 men and the

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[11] Carsten Niebuhr, *Travels Through Arabia* (Edinburgh, 1792), p. 127.

[12] D. Wilson, *op. cit.*, p. 285.

[13] H. H. Whitelock, "An Account of the Arabs of the Pirate Coast," *Trans. Bombay Geographical Soc.* I (1844), pp. 42, 45.

228 464 largest about 18; but as the smaller boats were the more numerous, he used 9 as an average to arrive at a total of 29,000 men employed in the pearl fisheries.

Zwemer estimated the number of pearling boats out of Bahrein in 1896 as about 900, those out of Qatar as 200, and total number of boats as 5,000, employing 30,000 men.[14] However, the figure of 900 does not seem to justify the total of 5,000; since Zwemer lived on Bahrein Island, the figure of 900 would seem to be the more accurate. Zwemer is apparently responsible for the figure of 5,000 dhows in the pearl fisheries which has appeared in print so frequently since: Villiers and Simpich state that there were 5,000 boats at the turn of the century, employing 80,000 men,[15] while O'Shea states that in normal times there are about 5,000 boats employing 74,000 men.[16]

Evaluating these estimates and others not mentioned, one is led to the conclusion that there were never over 3,000 boats engaged in the Persian Gulf pearl fisheries, and probably not over 40,000 men. Taking the figures that may be considered as relatively reliable, we arrive at the following average for the fleet during the boom years:

Bahrein (Zwemer)	900
Kuwait	600
Qatar (Zwemer)	200
Eastern Arabian ports	200
Trucial coast (Whitelock)	700
Persian ports (Whitelock)	100
	2,700

This figure would seem to be a fair estimate for the size of the pearling fleet at the turn of the century, and if anything is on the high side

228 464 178 The first few decades of the present century were the last prosperous years that the Gulf pearl fisheries saw. Whereas, at the turn of the century there were almost 3,000 boats engaged in the fisheries, today there are hardly one-fifth that number. An

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[14] S. M. Zwemer, *op. cit.*, pp. 100–101.

[15] Alan Villiers, *Sons of Sinbad* (New York, 1940), p. 373; Frederick Simpich, "Rise of the New Arab Nation," *National Geographic Magazine*, vol. 56 (1929), p. 388.

[16] R. O'Shea, *op. cit.*, p. 132.

estimate of the number of boats operating in 1946 would be as 228
follows: 464

Bahrein	150	178
Kuwait	100	
Darin, Qatif, Jubail	30	
Trucial coast, Qatar, and Persian ports	250	
	530	

Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the 228
coincidence of the pearling season with the date harvest. Starting 245
about June there is a migration of men northward from the
Batinah Coast to the Trucial Coast; these men work the pearl 221
fisheries. Some go north in caravans, others sail up in their 462
bedens and other dhows. Opposed to the flood of men who make 484
this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home.

Bertram Thomas states that a considerable percentage of the 228
army of men annually migrating northward to the Trucial Coast 567
is composed of slaves.[17] These Batinah contingents are usually 464
accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.[18]

Pearl fishing is a seasonal occupation, as the divers must wait 228
for warm summer water before starting to dive. Probably few 464
people realize there is a winter in the Persian Gulf, and that 132
the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

18 Ibid., p. 143

228 for the minimum winter air temperature to be in the middle
464 forties; during this period the sea water temperature in shallow
132 water will be in the low sixties.

228 Pearl diving requires that the diver's body be almost continu-
147 ally in the water. From experience the Arabs have found that
464 the surface water temperature has to be about 85° F. before
132 continued deep-water diving is feasible; thus the main pearling season (*al-ghaws al-kabir,* or "great diving") averages four months — from June into the first week of October. During this time the maximum surface water temperature exceeds 90° F. (in August) off Hasa. O'Shea states that on the Trucial Coast *al-ghaws al-kabir* often lasts until late October, the water apparently remaining warmer longer there than further north.[19] In addition to *al-ghaws al-kabir,* there are two other seasons: the "cold diving" season (*al-ghaws al-barid*) running from April to May, and the *mujannah,* running from October to March. The smaller boats run out in the shallower (warmer) waters for *al-ghaws al-barid* and act as a barometer for the season, while the *mujannah* is worked by waders who work along the shore when the tide is out, many equipped with glass-bottom "look boxes."

527 For *al-ghaws al-kabir* the various fleets, whether from Kuwait,
228 Bahrein, or the Trucial Coast, leave port en masse with flags flying, to the beating of drums and Arab chants. The few boats from the smaller ports slip out without fanfare. It is a stirring sight to see these fleets of dhows maneuver with their sweeps and then set forth under huge spreads of lateen sails, with their freshly oiled, burnt-brown hulls glistening across the aquamarine water, like some ancient Phoenician or Roman fleet.

228 An admiral represents the pearl fishing fleet of each port. It
502 is the admiral's boat which leaves the port first, and the admiral's duty to determine when the water becomes too cold for continuous diving. It is considered improper (by the owners) for the *nakhoda* of any large vessel to leave the pearl banks before the admiral leaves.[20]

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[19] R. O'Shea, *op. cit.,* p. 137.

[20] The admiral of al-Khobar, Saudi Arabia, now works for the Arabian American Oil Company, for al-Khobar no longer sends vessels out to the pearl grounds.

DIVING TECHNIQUE

The rights to the Persian Gulf pearl fisheries are jealously 228
guarded by the Arabs, and these rights have been backed up by 656
the British Government for over a hundred years. They are 685
limited to the inhabitants of the Gulf littoral—Arabs and Iranians. Pearl diving in the Persian Gulf is carried on without the use of any professional diving gear; it is "skin diving." The British have prohibited drags, dredges, and compressed air diving suits or helmets, and there is a 30,000 rupee ($9,000) fine for violation of the law.

However, in spite of this protection, foreigners have dived for pearls in the Gulf, and diving equipment has been used. In 1882 a Bombay syndicate sent a steamer, the *Johnstone Castle,* without official permission to the Bahrein banks. After five days the vessel was arrested by a British gunboat; its yield had been only 23 seed pearls.[21] During the pearling season of 1935 some Italians employed by the Qusaibi Brothers, wealthy merchants of Hofuf, Saudi Arabia, used deep-sea diving suits.[22] Presumably these merchants figured themselves exempt from British proclamations, inasmuch as they were Arabian nationals. But nothing more was ever heard of the venture, so it was either not a financial success or else the British brought pressure to bear against the practice. The Arab customs officials of both Saudi Arabia and Bahrein Island have been extremely suspicious of oil company divers, who spend a lot of time under water inspecting pipelines and piers, and they used to watch them through field glasses to see that they never brought up any oysters.

The maximum depth at which the divers work is about 12 fath- 228
oms.[23] Sweeps are left projecting overboard athwartships and are lashed to the tholepins and the deck. The divers' lines pass over the sweeps so that they will not become fouled. To get to the bottom a diver puts his foot in a loop of rope tied to a stone or iron weight, releases a slip knot holding the rope to the sweep, and holding onto the rope plummets down. The attendant pulls up the stone as soon as he feels it hit bottom. The diver holds onto

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[21] R. O'Shea, *op. cit.,* pp. 140–41.

[22] K. S. Twitchell, *Saudi Arabia* (Princeton, N. J., 1947), p. 26.

[23] A. Villiers, *op. cit.,* p. 374; Hugh Smith, "The Pearl Fisheries of Ceylon," *National Geographic Magazine,* 33 (1912), p. 174; R. O'Shea, *op. cit.,* p. 137.

[285] The diver holds onto
another line to which is tied an open-weave palm leaf basket for
● 228 the oysters; sometimes the diver has the oyster basket tied to his waist or around his neck and has the line tied to his body. When the diver is ready to come up, he gives several tugs on the rope. Thus the diver does not have to waste his valuable energy in swimming up or down. When he first reaches the bottom, he attempts to go out perpendicularly from the boat, frantically plucking all the oysters he can see before his air gives out. The diver usually crawls on one hand and one foot, using the other foot to propel himself and his free hand to collect the oysters.

228 The divers wear a horn noseclip similar to a clothespin; this
292 keeps the water out of their noses and enables them to hold their breath longer. Sometimes a diver will stuff cotton or beeswax into his ears to keep the water out. A set of leather finger thimbles protects his fingers from coral and other sharp objects; he wears only a loin cloth. This is the equipment universally used in the Persian Gulf, whether the diver is out of Kuwait, Bahrein, the
[164] Trucial Coast, or Persia. These divers wear no goggles and many have impaired vision from trachoma, so their efficiency is cut down considerably. It is strange that the Arabs have not added at least eye socket goggles, which the South Sea Island and Philippine pearl divers have eagerly accepted.

228 Alan Villiers states that the Kuwait pearl divers make ten
464 consecutive dives and then rest while a "substitute" makes ten; these two divers have the same attendant.[34] Divers in other parts of the Gulf work continuously, taking a rest all together at certain predetermined times, sometimes corresponding with prayertime.

The diver stays under about a minute, then rests for two or three.[35] Ten dives would consume about three-quarters of an

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[34] A. Villiers, *op. cit.*, p. 392.

[35] The average length of time that a diver stays under water has long been a controversial question. Alan Villiers (*op. cit.*, p. 392), who spent two months with the Kuwait pearling fleet, states that the divers averaged about a minute, ranging from 40 to 90 seconds. O'Shea (*op. cit.*, p. 137), spending some time among the Trucial coast pearlers, states that divers there remain under water from 40 to 75 seconds, also averaging about one minute. Whitelock (*op. cit.*, p. 43), who visited the Trucial coast pearl fisheries one hundred years ago, stated that the divers averaged about 40 seconds under water, but that he never saw them remain over a minute. Hugh Smith (*op. cit.*, p. 183) states that in the Ceylon fisheries the Arabs are the best divers, staying down from 60 to 75 seconds, with a normal maximum of 90 seconds, and that there is an authentic case of an Arab staying under 109 seconds in seven fathoms of water. In any

hour, after which time the Kuwait diver is dragged out of the 228
water and huddles in some spot on the ship looking more dead 461
than alive. He may average four shifts a day, making a total of 40 dives; O'Shea states that under excellent conditions the Trucial divers average 50 dives a day.[28] During this time ~~he~~ has spent almost one hour under water. Ten dives are not difficult, nor are 50 excessive in one day for anyone experienced; but day after day and week after week the diving goes on—for four months. When the season is over, the diver has weathered the impossible; 228
he has probably completed over 3,000 dives in from 30 to 50 feet 461
of water, and has spent over 50 hours under the surface of the 147
Persian Gulf—that is, over a full forty-hour week without air, valiantly striving to gather all the oysters he can see through his blood-shot and irritated eyes, which become less sensitive with each dive.

Every ten days or so the divers do get a day of rest, and if the 228
shamal is blowing they have to wait it out, as it roils the water. 461
Occasionally they have to go ashore to bury a diver who fails 147
to complete his 3,000 dives. It is not surprising that there are 164
one or two empty stations on each boat; their occupants lie huddled corpse-like under their cloaks in some part of the ship, too sick from scurvy or plain fatigue to dive. After they have been at it for many weeks, the divers are apt to get convulsive shivers when they come out of the water for their rest, even though the temperature may be 110° F. and their tenders are covered with a lather of sweat. There are few, if any, white men who could [771]
endure just one day of such punishment; the Arab could not either except for his belief that Allah is merciful and that a Paradise awaits him.

Every dhow has to put in for water and food every three weeks 228
or so. In recent years the pearling fleet has used the oil company's 312
pier at Ras Tanura for water, but vessels have been known to replenish their water supply from some of the submarine springs which gush into the Persian Gulf. A diver goes down with an [415]
empty skin and opens it in the potable stream; he can bring up fairly fresh water by this means. One of thse submarine springs,

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case stories one hears about the amazing power of the Arabs to stay under water from 5 to 10 minutes or more are absurd.

[28] R. O'Shea, *op. cit.*, p. 137.

[502] One of th[e]se submarine springs,
228 located a few miles north of Jubail, has been marked by a spar
212 buoy by order of King Ibn Saud.

228 165 O'Shea states that while the divers on the Trucial Coast are rarely attacked by sharks, about 30 were attacked and two killed around 1940.[27] Whitelock states that the Arabs claimed that the danger of sharks was ever present, but that their worst fear was from the saw fish, which had been known to cut divers completely in two.[28]

228 225 136 Rihani writes that what the Persian Gulf pearl diver dreads most is the *dawl*. However, he apparently does not realize what the *dawl* is, merely quoting Sheikh Khalifah ibn Muhammad al-Nabhani's *History of Bahrein:* "The *dawl* is a semi-fluid animal, about the size of a man's hand, round in shape, with a multitude of tendons about two feet in length, resembling a network of silk. It has no power of locomotion, but is driven by the waves and currents hither and thither. If it comes in contact with the body of man, it burns it, leaving a deep scar; and if it is lifted out of the water and left in the sun for five minutes, it dissolves."[29]

The zoologist will immediately recognize this description of the *dawl* as a jellyfish. It is in fact a small bell-shaped jellyfish with two to three foot-long tentacles. The *dawl* swims at any level and is practically invisible underwater; thus the divers cannot keep away from the stinging tentacles, which will burn the body and can put out an eye. Along the Ras Tanura peninsula, the *dawl* is most often seen near the surface shortly before flood tides.

136 There is a species of needle urchin (*Diadema*) in the Persian Gulf with spines from one or two feet long.[30] It is known that these spines will produce nasty slow-healing wounds if bumped into under water. This urchin may be the cause of some of the open sores on the divers' legs, although salt water alone could cause them, for the Persian Gulf has the highest salt content of all the ocean bodies, and constant immersion in salt water is known to produce a rash. However, as the *Diadema* is black and several

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[27] *Ibid.*, p. 138.

[28] H. H. Whitelock, *op. cit.*, p. 43.

[29] A. Rihani, *op. cit.*, p. 280.

[30] *Diadema* was first reported from the Persian Gulf by this author: A. H. Clark and R. LeB. Bowen, Jr., "Echinoderms of Saudi Arabia," *American Museums Novitates*, No. 1390 (1949).

feet in diameter, it is easily seen under water, and thus more 136
easily avoided than the *dawl*. The Arabs have no fear of the sea turtle and they relate that when they find one of these on the pearl banks, they ride it to the surface by grabbing it behind the neck and directing it upward.

But the dangers from sharks and devilfish (rays) are slight 164
compared to the physical danger resulting from simply driving 147
oneself past the limit of human endurance. The "bends" are a 752
common affliction among the divers and may cause severe pains in the joints, paralysis, or even death. Suppuration of the eardrums and rheumatism are also common. The divers may lose blood from surfacing too quickly or from staying under too long; Frederick Simpich tells of seeing a man come up from a 10-fathom dive bleeding at the nose as if someone had hit him with a ball bat.[31] Whitelock states that the divers of the Trucial Coast were very emaciated and suffered from inflamed eyes, which they treated with antimony.[32]

Divers never eat while working, except for a sip of tea or 262
water, as food would cause nausea. When the sun has sunk so 147
low that diving stops, they eat a few dates or a little rice and drink a little tea, but that is all. This is one of the reasons why they become so weakened and emaciated during a season. Sleep is the only energy builder the divers have.

OPENING THE OYSTERS

With dawn the first activity of the day is the opening of the 228
oysters caught the day before. By this time the oysters have been out of the water long enough for their shells to open, so that one does not have to fight them. The oysters are not divided according to divers, but are simply piled in sacks on the deck, so that no one knows exactly who caught the one that may contain the great pearl. After the valves are parted, the openers knead through the flesh, extract any pearls, and throw the shells and the meat overboard. Less than one-third of the oysters yield pearls and these are mostly "seed pearls," those very small irregularly-shaped pearls which might well be called "pearl dust."

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[31] F. Simpich, *National Geographic Magazine*, vol. 36 (1919), pp. 369–93.

[32] H. H. Whitelock, *op. cit.*, pp. 38, 44.

228 The captain watches the whole procedure closely to see that no pearls are secreted; when the last oyster is opened, he collects all the pearls, ties them in a small red cotton flannel cloth, and puts them in his sea chest on the poop deck.

The Persian Gulf procedure for opening the oysters is in vivid contrast to the practice of some of the other pearl fisheries. In Ceylon; for example, all the oysters for any one day are brought into the yards of the company holding the concession to the banks. Each diver carries his own oysters up to the stockaded compound where he divides them into three piles. The company inspector comes around and tells the diver which pile he can take; when he leaves the compound he has to give back a portion to his attendant and to the captain of the boat.

There is evidence that some such practice may have been carried out along the Arabian coast in the past. A century ago the pearlers of the Trucial Coast opened their oysters on land, for Whitelock relates that the pearlers remained at sea until they had a boatload of oysters and then proceeded to the nearest island to open the shells.[33]

228 172 During medieval times the Arabians on the mainland controlled Bahrein Island; their capital was at Hofuf. Huge heaps of oyster shells, some a hundred yards long, stretch along the shore a mile south of al-Khobar. Nearby have been found grinding pestles, stone diving weights, and crude pottery fragments. The species of oyster in these mounds is the same small variety commonly found today. When the refinery at Ras Tanura was being built, a low hill was leveled by bulldozers. Cutting through many ancient graves they turned up a stone diving weight among the numerous bones and pottery. Between Jubail and Ras Tanura, several more ancient shell heaps have been located high on the beach. Some of these are composed *entirely* of the large plate-sized species of pearl oysters; now this species is found only occasionally.

MARKETING AND DIVISION OF PROFITS

228 437 The majority of pearls are sold to Bombay merchants, but frequently brokers in search of a bargain will buy the best before

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[33] *Ibid.*, p. 42.

the dhows leave the banks. These men wander through the fleet 228
in their own boats (usually launches) always trying to get to a 437
first quality pearl before the other brokers hear of it, and always hoping that the *nakhoda* will not recognize its value. The
broker's paraphenalia consists of a magnifying glass, a small [413]
hand balance, weights, and a set of brass screens for grading the pearls. When pearls are sold on the banks they are ceremoniously transferred from the captain's red bunting to the broker's.

Regardless of where they are sold, the majority of the pearls 228
go to Bombay, and from Bombay eventually to Paris, the world's 439
pearl emporium. Pearls are usually shipped to Bombay by air. 456
The reason is simple: Usury and insurance are prohibited by the 784
Quran. If the pearls were shipped to India by Arab dhow or steamer through an Arab agent, there could be no insurance on the consignment. However, if the pearls are shipped via Trans World Airline or British Overseas Airlines Corporation, the pearls can be heavily insured. Thus, the Arabs use a Western agency to get around the Quranic prohibition. In Bombay, Indian workers skillfully pierce the pearls with fine bow-driven drills and string them on silk, graded according to color and size. The pearls are sold to European dealers in bunches consisting of a number of strings and generally known as "Bombay bunches."

When the season has ended and the pearls are sold, the captain 228
deducts the cost of the food and provisions. What is left repre- 465
sents the profit. Of this the owner of the dhow gets one-half; of the remainder each diver and each attendant gets one share and the captain two. Most of the dhows leaving Saudi Arabian ports are small (not over 40 feet) with small crews—usually something like 6 divers, 4 attendants, and a captain. Thus, each diver and attendant would get one twenty-fourth (about 4 percent) of the profits, and the captain would get one twelfth (about 8 percent). The pearling dhows operating out of Bahrein and Kuwait are generally much larger than the Saudi Arabian dhows, and may have crews of 40 or more. The profits of these craft are split in much the same way as the profits on smaller dhows, but the captain gets more shares with these larger crews than he does with the smaller.

ECONOMIC RELATIONSHIPS

● 228 426 Pearling is a great gamble for everyone concerned. A share may be worth only 50 or 100 rupees if the take has been poor, but on the average a share should net at least several hundred rupees. It must be remembered that a share usually represents a year's earning, since the pearling industry operates on the "debt system." This is not to be confused with the "truck system," for the workers in the Persian Gulf pearl fisheries are not paid in produce. In the debt system the divers and tenders get actual cash advances during the seasons they are out of work, and their families get food and supplies while they dive. They must pay off their incurred debts with their earnings after the pearling season, but somehow they never seem able to get free.

228 426 672 Until recently, a diver who accepted cash advances from a *nakhoda* had doomed himself to diving until death, and unfortunately death might not be an exit, as his debt was simply passed on to his son or brother, who then went on to incur his own debt. Once in debt a diver is prohibited from hiring to another *nakhoda*—he must repay his debt to the man who gave him cash advances. A diver or anyone else who accepts an advance in the pearling industry has sold himself to economic slavery, for the *nakhoda* owns his ability to work, while the man must support himself. Thus, a diver is bound to return to the purgatory of pearling at the *nakhoda's* call. Since Muslim law prohibits interest or usury the debt system effectively gets around this. The *nakhoda* is usually in turn bound to some merchant in the same way, for he has taken cash advances to give to his divers and attendants.

567 465 In Oman the *nakhodas* often hire their labor from a tribal agent, giving the agent an advance of money and rice. In the case of slaves, the agent takes this to the slaves' master; at the end of the season he collects the balance of the slaves' earnings. Thus the slaves' earnings go completely to his master, who in return clothes and feeds him.

228 656 426 On Bahrein Island the Bahrein Government has, at the suggestion of the British, effected many reforms in the pearling industry with respect to the debt system. Hereditary debts have been abolished; pearl divers on Bahrein now take their debts to

their graves, and justly, too, for diving probably hastened their 228
end. The Government demands that account books be given each 656
diver and that they be kept up properly, and sends inspectors to 426
see that they are. Before the season begins at Bahrein the amount of cash advances is agreed upon and proclaimed. The divers have put up a terrific objection to this limitation, for it seemed to them that they were simply getting less money. They could not understand that their debt was being lowered—in fact they did not care, for hadn't they always been in debt?

There is a "diving court" which enforces the arbitrary laws 228
of the industry, such as those dealing with engagement of labor, 678
taxes, spurious pearls, etc. The court also disposes of any case of 686
a *nakhoda* who cannot pay off his debts; the *nakhoda* may lose his boat and divers, but not his personal property.

There has never been any noticeable effort on the part of the 651
ruling sheikhs to better the lot of their subjects: if they were unemployed 464
for long periods in the winter they would be sure to
work harder during the pearling season to pay off their winter's 461
debts. As the local sheikhs levy a tax on every boat and get a cut 426
of some sort on the proceeds, the pearlers in a sense work for them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a farmer, fisherman, or herder there would be little incentive to enter the pearling purgatory. Under normal conditions the divers have an eight months' loaf during which time they live off their *nakhoda;* this is to the liking of both the diver and the *nakhoda.*

However, many divers do find other work, as fishermen or 463
mariners. The depression of the thirties hit the Persian Gulf 464
pearl industry with great suddenness. Within a short period tens 505
of thousands of pearlers in the Gulf found themselves without an occupation. The marine stock of Kuwait rose to the situation and gradually shifted to cargo hauling between Kuwait and
Basra, Iran, India, South Arabia, and East Africa. Large ocean-going [501]
double-ended dhows have carried the fame of Kuwait seamanship throughout the Middle East, sailing to Africa on
one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

Kuwait MI1

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Negro origin, the descendants of slaves, though not now slaves themselves. Many others are of Iranian origin. Almost none are Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined. MA 505 565

As the *nakhoda* class is tied to the merchant by a structure of debt, so also are the sailors tied to the *nakhoda* class in the same way. All deep-sea sailing is paid for on a shares system, and there are no wages. Often the *nakhoda* of the deep-sea dhow has an interest in a pearling vessel (though not now to anything like the same extent as in former years), and the sailor may be bound to him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate. MA 565 426 465 228 ● 428

The sailors go to sea because they know no other life, and they make a wretched living by incredibly difficult methods. They have no possessions other than the clothes they stand in, and one or two spare gowns, a good headcloth, and a few sarongs. Their toothbrush is the twig of a tree; their ablutions are made five times daily at a mosque well, or in the sea; they know no shelter and rarely have a bed. The younger seamen, I have noticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere. MA 505 511 342 291 515 501 565

What keeps the seaman a disciplined and more or less contented worker is his hope of reward, principally from smuggling or his own ventures, and his ambition to get hold of a tiny shop in the *suq* of his home town. This is an ambition he rarely achieves. His more usual fate is to die young, especially if he be also a pearl diver. MA 565 554 165

Kuwait MI1

000 also a pearl diver. Pearling from Kuwait and Bahrein is carried
K on during the season of the hard southwest monsoon in the Indian
• MA Ocean, when the big dhows are laid up and there is no ocean
● 228 sailing. It is therefore possible for the same men to carry on both callings, though in these days the seaman is becoming a little too enlightened to go off cheerfully to the purgatory of pearling.

MA The seaman is also helped by his religion, by his interest in the
565 seafaring life (which has a great appeal of its own) and the fine
581 camaraderie about it, and in many cases by the delights of night
595 life in such ports as Zanzibar and Bombay. If he has no harem of his own back in Kuwait, he is certainly no celibate at Zanzibar. He generally seems to manage a small home in Kuwait after a few voyages, depending upon his own business acumen and the general success of the dhow he serves in. Many *nakhodas* appear to maintain several.

MA
505 In addition to the merchants, *nakhodas*, and seamen, there is
565 another class of importance in the dhow trade. These are the mates, the experienced officers who, never able to become *nakhodas* themselves because of an unacceptable financial status, very often have more to do with the actual sailing of the dhow than the *nakhoda*. Each big dhow carries at least one such experienced man. Sometimes he is of Iranian origin, and has been sailing since he could walk. Sometimes he is a Negro, member of a trusted ex-slave family, who lives with the *nakhoda* at home or has been brought up in his courtyard.

MA
505 He is always an able mariner, but he is not often trusted to
565 trade. It is not at all uncommon for a *nakhoda*, on the usual East
439 African voyage — which always begins with a long haul and long-winded peddling of dates round the coasts of Southern Arabia, and to Berbera and perhaps Djibouti — to leave the ship for considerable portions of the passage at sea, while he looks after her business interests ashore. For example, in one Kuwait dhow in which I had the good fortune to sail for some eight months, the *nakhoda* cheerfully left the ship at Aden and went on to Mukalla by steamer, to steal a march on the other shipmasters and scoop the cream — he hoped — from the passenger market. Again, he left the ship at Zanzibar, and his mate took her down to the delta of the Rufiji, hauled her out on the beach at Kwale Island south

226 one in each hand (Fig. 9), he works the net around the edge of the stockade and empties the fish into palm-leaf baskets (Figs. 10 and 11). Most of the fish weigh less than a pound, but it is not unusual for a weir to yield many hundreds of pounds of fish in a tide change, though sometimes only enough are caught to feed the fishermen. The fish are usually sorted into two or three grades and are often sold on the spot. Several times I saw sharks as large as six feet trapped in the stockade; extracting these monsters was a delicate task. Most of the cuttlefish used as bait in the basket fishtraps come from these palm-stem fishweirs.

There seems to be a direct correlation between the amount of fish caught in a weir and the wind velocity, at least on the Ras Tanura peninsula. The Arabs can estimate their catch simply from the atmospheric conditions prevailing before low tide: if the *shamal*, the strong north wind, has been blowing, the haul is sure to be good.

I never saw the effect of the wind fail. In the fall jumbo shrimp, equal to any found in the Gulf of Mexico, are caught in these weirs. If there had been little wind, the catch would be small, but if the wind had been considerable, there were sure to be several dozen nice shrimp. The 10 weirs on the Tarut Bay side of Ras Tanura yielded at the most only several dozen shrimp, most of which came from two funnel weirs; the shrimp that appeared in local markets in large quantities came from the weirs on the flats
[227] around Qatif. The shrimp in Arabian markets is sun-dried, so that it can be stored and sold in any season.

As a rule, the men who work a fishweir get half the profits, and the owner gets the other half. The profits are figured by deducting from the gross return the cost of the workers' food and of the material required to maintain the weir. If a trap fails to produce, the owner sometimes supplies the tenders with cash, which must be repaid later.

In summer the daylight low tide in the Persian Gulf at Ras Tanura is about two feet higher than the minimum, in February. The water does not get low enough in the weirs to trap fish effectively, and the summer catch
[228 is therefore poor. Usually trap tenders are assigned to pearl diving and rock
464] mining, possible only in the warmer months; one man is left to collect the small catch and keep the weir in condition. When Ramadan, the great Moslem fast month, falls in summer, the Arabs on Tarut Bay allow their fishweirs to fall into disrepair. It is surprising how fast a weir will disintegrate under even the slight wave action in a sheltered area such as Tarut Bay. In 1945 there were several strong shamals during Ramadan (then the last two weeks in July and the first two in August), which, coupled with the

[text continued on p. 393]

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut Bay side of the Ras Tanura peninsula. All during the fishing season constant maintenance is necessary (Fig. 13).

226 Because of its shoal water, Tarut Bay is the only place along the Persian Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier was built on the Gulf side of the end of the peninsula, and a huge pipeway was run from this pier to the refinery, some eight miles away. The pipeway passed close to several of the Tarut Bay fishweirs, and the considerable fill dumped into the bay changed the shore contour slightly

315 The Arab fishweir owners, ever alert to monetary opportunity, brought suits against the Arabian American Oil Company, asserting that the change
691 in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
424 completed in October, 1945, oil was occasionally spilled into Tarut Bay and provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir
435 rights. By 1947 only three of the original 10 weirs were left; the total price paid was about 72,000 Saudi riyals ($22,000). This money enriched the few Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras Tanura area the sale was an economic blow, for much of the fish supplied to Hasa Province came from the Ras Tanura traps.

ROCK MINING

● 228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[2] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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[2] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen, Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shewes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

228 his great toe completely severed by a large piece of faroush that had slipped and hit his foot as he stood on the sea bottom.

Hasa, known to Americans familiar with native construction in Arabia as "sea rock," is found on the sea bottom in more or less solid deposits, from which a diver pries pieces (Fig. 15). Faroush is much more difficult to mine: it takes at least a day to get a boatload, whereas a crew may get three

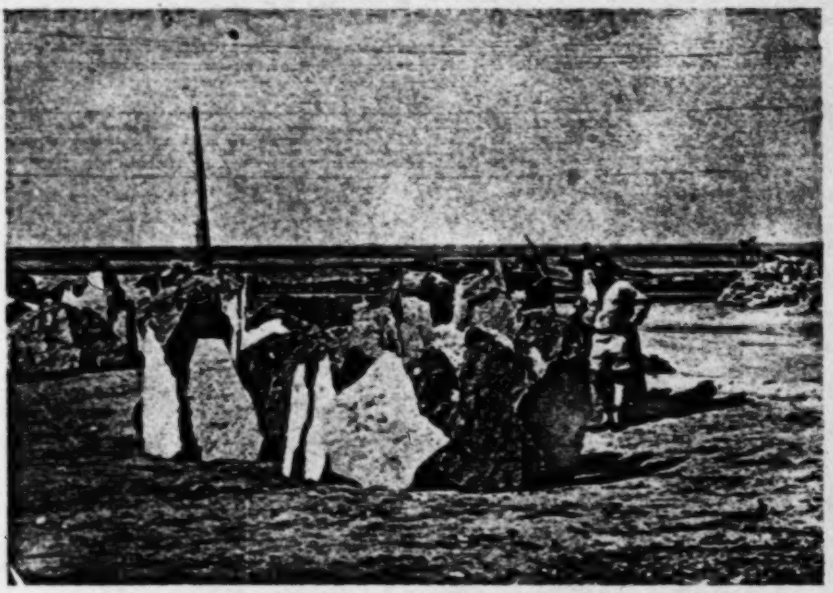

Fig. 14—Author standing by slabs of *faroush* on the shore of Bahrein Island. Faroush is mined near Bahrein in much larger pieces than in Arabian waters. Pile of *hasa* in right background.

or four boatloads of hasa a day. Faroush is sold by the square measure, hasa by the cubic measure.

228 The rock divers, like the pearl divers, work only in the warmer months.
464 Since they generally work in water that is shallower than the pearl waters
and therefore remains warm longer, the mining season is two or three months
461 longer than the pearling season, which is only four months. The rock divers
do not work constantly, hour after hour, day in and day out, as the pearl
[339 divers do, since each boatload has to be sailed to shore. A small stock pile
317] of faroush and hasa is always maintained in every seaboard town, and most
of its buildings are constructed from these two rocks. Lime is made by burning hasa.

426 The crews mining coral rock work on the "debt system," notoriously
465 exploited in the Persian Gulf pearling industry. Although they are paid good

wages, they are given cash advances and food during the winter and during 426 slack periods. They never seem able to pay off their debts to the dhow 415 owners.

PEARLING

The most colorful marine industry of the Persian Gulf is pearling.[3] 228 Pearling is definitely a seasonal occupation, confined to the months when 132

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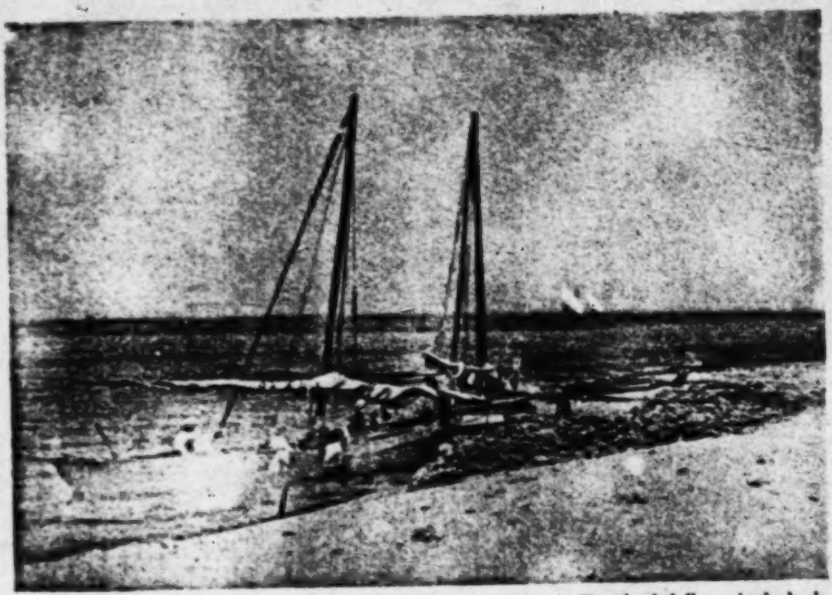

Fig. 15—Unloading hasa from jalbuts on the Ras Tanura peninsula. Two loaded dhows in the background are bringing in more.

the water is warm. On the Persian Gulf coast of Arabia the minimum winter air temperature is in the middle forties, the shallow-sea temperature in the low sixties. From long experience the Arabs have found that they can begin deepwater diving in June and continue until the first week in October. At the start and finish of the season the surface-water temperature is about 85°, but the deep-water temperature is considerably less; the maximum surface-water temperature may exceed 100° in August. Before this main season the *ghaus al-kabir* (great diving), there is a season of about two months, known as the *ghaus al-barid* (cold diving), when smaller boats work the shallower waters near their home ports; during the winter many men go out as "waders" at low tide to pick up what they can just below tide level. 113

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[3] See also R. LeB. Bowen, Jr.: The Pearl Fisheries of the Persian Gulf, *Middle East Journ.*, Vol. 5, 1951, pp. 161–180.

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FIG. 16—Emir Nasir of Darin with a season's crop of pearls from his pearling jalbut.

Pearl oysters are found from low-tide level to 20 fathoms. There are pearl beds off the whole Arabian coast from Bahrein to Ras al Mish'ab, but the best banks are north and east of Bahrein Island, and the best beds between 5 and 10 fathoms. The beds are not charted; indeed, this would be useless, since they shift periodically. A bank may be sterile for several years and then suddenly produce the finest pearls of the season. The Arabs believe that the best pearls—the largest and whitest—come from deep water, though some of the more pessimistic say that the Persian Gulf never yields more than two first-class necklaces in any one season.

527 The pearling boats leave Bahrein, Kuweit, and the Trucial Coast of
502 Oman for the main season en masse to drum beating and chants, but the few dhows from the Saudi Arabian ports slip out unceremoniously. The Bahrein fleet works up, the Kuweit fleet works down, and the small Saudi Arabian fleet works in the middle.

The *nakhoda* (captain) of a pearling dhow orients his craft at the edge of a bed so that when the anchor line is paid out, the dhow will drift across the bed. When the divers start to get only a few oysters, the dhow is allowed to drift a little. When it is completely across the bed, the crew moves it back to a fresh location with the sweeps, to the accompaniment of drum beating and chants. It is here that the nakhoda shows his real skill and knowledge, for he must keep his craft in virgin water.

223 Pearl diving in the Persian Gulf is essentially "skin diving." The diver wears only a loincloth and leather fingers to protect his fingers from sharp
292 coral and shells; a horn noseclip and cotton or beeswax to stuff into his ears complete the "equipment." The use of drags, dredges, or compressed-air diving suits has been prohibited by the British, long the protectors of the Persian Gulf, and only the inhabitants of the Gulf—Arabs and Persians—can work the pearl fisheries.

228 Each diver has two lines, one attached to a stone or iron diving weight; so that they will not become fouled, they are passed over sweeps left projecting over the gunwales athwartship and lashed down to the tholepins. The diver puts his feet into a loop over the diving weight (or simply lets the rope pass between his toes), releases the rope by untying a slipknot, and, holding the rope tightly, plummets to the bottom. As soon as he releases the line with the weight attached, the attendant hauls it to the surface. In the meantime the diver frantically plucks all the oysters he can before exhausting his air. He usually crawls on one hand and one foot, propelling himself with his free foot and collecting the oysters with his free hand. He puts the oysters into an open-weave palm-leaf basket fastened to his waist or around his neck, or hitched to a rope (which he holds or which is tied to his body). When he is ready to come to the surface, he jerks this rope.

The maximum depth at which the divers work is about 12 fathoms (72 feet). The average length of time they remain under water has been greatly exaggerated: some stories say 5 to 10 minutes. Villiers,[4] who spent two months on a buyer's *jalbut* with the Kuweit fleet, states that the divers stayed under water from 40 to 90 seconds, averaging about a minute. O'Shea[5] spent some time with the divers of the Trucial Coast, and he also states that the time averaged about a minute, ranging from 40 to 75 seconds. Hugh Smith[6] observes that the Arabs are the best divers employed in the Ceylon fisheries, staying down from 60 to 90 seconds; he cites an authentic case of an Arab who stayed down 109 seconds in 7 fathoms of water.

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461 Ordinarily the diver remains under water for about a minute and rests for two or three minutes; on a good day he may make 30 or 40 dives, totaling half to three-quarters of an hour, and by the end of the season he may have completed more than 3000 dives in 30 to 50 feet of water.

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136 The diver's worst enemy is fatigue. He has little fear of sharks and, indeed, is seldom bothered by them, though O'Shea[7] speaks of an attack on 30 divers, two of whom were killed under water. Whitelock[8] states that the greatest fear of divers on the Trucial Coast is the sawfish, which has been known to cut divers in two. The creature most feared by the divers in the Persian Gulf, at least on the north banks between Kuweit and Bahrein, is a jellyfish known to the Arabs as the *dawl*, which has two- to three-foot stinging tentacles that can easily put out an eye.

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113 [4] Alan Villiers: Sons of Sinbad, New York, 1940, p. 392.

[5] Raymond O'Shea: The Sand Kings of Oman, London, 1947, p. 137.

[6] H. M. Smith: The Pearl Fisheries of Ceylon, *Natl. Geogr. Mag.*, Vol. 23, 1912, pp. 173–194; reference on p. 182.

[7] *Op. cit.*, p. 138.

[8] H. H. Whitelock: An Account of the Arabs of the Pirate Coast, *Trans. Bombay Geogr. Soc.*, Vol. 1, 1844, pp. 32–49; reference on p. 43.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 312 502 438 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 442 439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they all end up in Bombay

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, Amer. Museum Novitates, No. 1390, 1949.

228 all end up in Bombay. The Indians drill, polish, and grade the pearls, and
442 string them on silk; these short strands are known as "Bombay bunches."
439 Before World War II the pearls were sent to India by streamer; today they
509 are usually sent by air from Bahrein, Kuweit, Sharjah, and Dharan. The
pearls are usually sold to Indian merchants in these towns, but occasionally the Arabs themselves take the pearls to Bombay.

After all the pearls have been sold, the nakhoda figures out the season's
228 profit. The owner of the dhows gets half the profit; the other half is divided
465 among the crew. Most of the pearling dhows out of Saudi Arabian ports are small (not more than 40 feet), with crews of ten -- six divers and four attendants -- in addition to the nakhoda. Each diver and each attendant gets one share in the profits (about 4 per cent); the nakhoda gets two shares, unless he owns the dhow and longboat, in which case, of course, he gets more than half the profit. The number of shares each of the crew, the nakhoda, and the owner get is agreed on at the beginning of the season and may vary from place to place. Many of the pearling dhows out of Kuweit and Bahrein are considerably larger than those out of the Saudi Arabian ports and may have crews of forty or more; on these the nakhoda gets a larger number of shares.

Pearling is a gamble for everyone concerned, from the merchants to the divers. Some seasons are good, some bad; sometimes a boat has bad luck, sometimes excellent luck. A share on a pearling dhow should be worth several hundred rupees, but it may not be worth fifty.

Usually a share on a pearling dhow represents a year's wages, since the
228 pearling industry operates under the "debt system" mentioned above (not
426 to be confused with the "truck system" of pearl fisheries elsewhere, in which the divers are paid off in produce). Under the debt system the divers and attendants are given cash advances during the winter season, when they are not working, and their families are given food and supplies while the season is on. The advances are deducted from their calculated shares, so that usually the worker gets little or nothing.

Thus the divers and attendants are perpetually in debt. Once a worker is in debt to a nakhoda, he cannot work for anyone else during the pearling season; this is one of the laws of the industry. He has virtually sold himself into economic slavery to the nakhoda, who has his services and never actually has to pay him anything, whereas he in effect pays the nakhoda in the pearls he produces. However, it should be remembered that the nakhoda is in turn usually in debt to some merchant, who commonly finances numerous nakhodas.

228 On Bahrein and in Kuweit the governments have made reforms in the
656 pearling industry. On Bahrein a pearl diver's debts now die with him; in
672 other places a diver's debts are passed on to his son or brother. The Bahrein
426 government also demands that account books be kept for each diver, and
the cash advances are agreed upon at the beginning of the season.

228 However, there has been a drastic change in the Persian Gulf pearling industry. The great depression after World War I and the competition from Japanese cultured pearls dealt the pearl fisheries a serious blow. Twenty-five years ago there were nearly three thousand dhows engaged in pearling in the Persian Gulf; today there are not more than six hundred. In the twenties the east-coast ports of Saudi Arabia probably sent several hundred boats to the pearl fisheries annually; today there are not more than several dozen. In the twenties the value of the Persian Gulf pearl fisheries was more than a million dollars; today it is less than a quarter of a million.

Thousands of divers and attendants were thrown out of work. In Kuweit
228 numerous pearlers found employment on sailing ships traveling to India
464 and Africa. On Bahrein Island many were absorbed by the rapidly expanding oil industry. In Saudi Arabia oil development came late, and the unemployed pearlers had already been absorbed as fishermen, rock miners, and farmers; in fact, so well adjusted were the Saudi Arabian towns that when the Arabian American Oil Company needed large amounts of labor in 1945, it had to hire Bedouins from the desert. Oil came late to Kuweit also; however, here workers were drawn from the marine industries, since the Kuweit Oil Company paid higher wages than the workers could get as sailors, pearlers, or fishermen.

Oil has thus been able to offer salvation to the lowly coastal worker of the Persian Gulf. A man in debt can now get a job with an oil company and pay off his debt. So effective has this proved that the Kuweit, Bahrein, and Saudi Arabian nakhodas have difficulty in getting men to send to the pearl fisheries, or to man the sailing ships going to India and Africa. However, oil has yet to come to Oman, so that pearlers still leave the Trucial Coast in large numbers, and many Oman dhows from Sur still sail down to Africa.

228 However, a century before this, Kuw[illegible] was apparently noted more
361 for its pearl fisheries (which are still important) than for its maritime
505 trade, as Niebuhr related that in 1763

> Kuwait is a sea-port town. . . . The inhabitants live by the fishery of pearls and of fishes. They are said to employ in this species of naval industry more than 800 boats. In the favorable season of the year, this town is left almost desolate, everybody going out either to the fishing, or upon some trading adventure.[6]

In Niebuhr's time, in the eighteenth century, the Omani sailors from Muscat and Sur on the Gulf of Oman were the famed Arab mariners, for Niebuhr related that

> The inhabitants of Oman, although not fond of sea-fights, are nevertheless the best mariners in all Arabia. They have several good harbours, and employ many small vessels in the navigation between Jidda and Basra. To this last town there come annually fifty such vessels.[7]

In the middle of the last century Muscat was still an important maritime port, for in 1854 Osgood related that

> Several ports in the Persian Gulf are tributary to it, and some excellent ships and a large number of [*baghlas*] employed in coasting and foreign trade, are owned by the Banian merchants at Muscat. In fact more than half of the trade of the Persian Gulf is carried on in ships owned at Muscat. . . . The trade with America, which is carried on chiefly by vessels from Salem does not exceed thirty-five or forty thousand dollars annually. Dates and cash are usually taken in exchange for American merchandize.[8] [439]

In the present day Muscat has completely fallen from its former prized position and given way to Kuwait and Bahrein Island in the Persian Gulf. However, the port of Sur in Oman still carries on the maritime tradition of the Omanis and maintains a considerable fleet of dhows which have long been prominent in the trading along the African coast.

501 The craft that make the trip down the African coast from Arabia are by no means all large ocean-going vessels; craft of all sizes and descriptions come into Zanzibar. Villiers[9] tells of seeing a 30-foot *jalbhut* from Oman sailing down the African coast. Having owned and sailed a *jalbhut* of about the same size in the relatively calm Persian Gulf waters, I have nothing but the utmost respect for anyone with the nerve to sail such a small open boat several thousand miles in the potentially rougher Indian Ocean.

113

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[6] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 127.

[7] Ibid., 122.

[8] Osgood, *Notes of Travel* (Salem, 1854), p. 81.

[9] A. Villiers, *SS*, p. 190.

5: Harrison D-4 (1912-1924) 1924 MI Middle East

Marity - Arabs MK2

CHAPTER IV

PEARL DIVERS OF THE EAST COAST

ALONG the East Coast of Arabia are located the 228
largest pearl fisheries in the world. Pearl fish- 433
ing has been the occupation of that part of 162
Arabia for many centuries. Probably a hundred thousand Arabs are engaged in this hard and dangerous work throughout the summer months. Half a million people must depend on these divers for their livelihood. This is not a large percentage of the inhabitants of Arabia, but the pearl divers are worthy of consideration, for the outside world has come into closer contact with them than with any other Arab community in the entire peninsula. As might be expected, the coast cities contain artisans, laborers, a few date gardeners, and merchants. These differ in no significant way from similar classes elsewhere. The pearl diving community is unique.

Nothing can exceed the barrenness of the coast where 311
these men live. From Kuwait in the north to Ras el 433
Kheima in the south, a distance of three hundred miles, 312
scarcely a green thing is to be seen, except for a few miles of date gardens at Katif and a smaller number at Dibai. The water available for drinking is brackish and almost undrinkable in many places. The inhabitants of Umm el Qaiwain, one of these towns, "drink mud," to quote the Arabs. The coast is so utterly unproductive that all food must be imported, and in some places even the fuel and drinking water.

5: Harrison D-4 (1912-1924) 1924 M1 Middle East

Maritime Arabs M1.2
~~Kuwait: M1+~~

M
438 All the cities along this coast north of Ras el Kheima
361 are diving communities, and some of them are quite large.
k Kuwait, the largest, has about fifty thousand inhabitants.
161 Kuwait has good harbor facilities, and the government of
228 the city has been notably efficient and strong-handed for
439 many years. A pearl diver may as well live in one coast
312 town as another, and so Kuwait has grown to be a large
262 city. The drinking water for this entire city is brought
in specially constructed sailing vessels from the mouth
of the Arab River in Mesopotamia sixty miles away.
The divers live on rice that is brought them from India,
on wheat that comes from Persia, and on sheep from inland Persia and Arabia. The only local product is fish.
The physical surroundings of all these towns are very
similar to those of Kuwait. The landscape is an unbroken and monotonous expanse of sand on one side
[k and sea on the other. The heat in summer is ex-
132] treme and the air is practically always moist, so that
for three or four months in the summer the climate is
almost unbearable.

M In the spring the diving community begins to hum
228 with activity. The boats are cleaned up and repaired.
463 New masts are put in and new rigging provided. As the time for diving approaches, supplies of food and water are taken on board. The divers collect from far and near. Most of the population are divers, and in addition many more come from a distance to dive for the season. There are men from every district in Arabia and from all over Mesopotamia; a few come even from the various provinces of Persia. The place is filled with festivities and good fellowship and hopes for a successful season.

M The day for embarkation finally comes. The boats
228 are fitted with enormous sails, and also with a full com-
501

228 501 plement of long heavy oars, so that they can be independent of the wind when necessary. One of these great diving boats moving out to sea is a sight long to be remembered. I once watched one of the largest Dibai [504] boats leave for the pearl banks. During the winter these boats are hauled up on the sand within a lagoon that runs through the city. The great boat moved majestically down this lagoon and out to sea. There were fifteen to twenty enormous oars on each side and each oar was manned by two divers. The oarsmen swung down the [461] lagoon with a stateliness that I have never seen surpassed, the men chanting as they worked, *"A billah mal, a billah mal,"* in a rhythm that had all the swing of a regiment off to war or a football team on its way to a game. There was a splendid silk flag flying at the stern, and the great ship went out to sea with every small boy in Dibai wishing he was on board. I felt the thrill of it myself; and the Baluch boy that I had with me as a medical assistant had hard work to keep both his feet on the ground. "Oh *Sahib,"* he said, "it makes me want to go with them."

However, once the pearl banks are reached, the work is hard and dangerous. The long oars are fastened in place so that they stretch out horizontally over the water and to each oar a rope is tied which carries a lead weight 228 or a stone on its end. The diver stands on this weight as he descends, in order to get down quickly. Each diver has an assistant whose duty it is to haul up the weight as soon as the diver reaches the bottom, so that it may be ready for the next descent. There is a second rope which is fastened around the diver's waist. By this his assistant pulls him up when he gives the signal. This assistance is not necessary if the diving is in shallow

228 water up to twenty feet, but when the depth is greater, as from fifty to seventy-five or even occasionally ninety feet, the help of the assistant is indispensable.

The diver puts something that looks much like a clothespin on his nose, takes a long breath and descends. He can stay under about two minutes, and in that time he walks around on the bottom picking up the oyster shells that he finds there and filling a small basket, which hangs by a cord around his neck. This basket is about the size of the crown of a hat. His forefinger is protected by a heavy fingercot, for often it is not easy to dislodge the oyster from its bed. When the little basket is filled, or as soon as he has been down for about two minutes, the diver gives his assistant a signal and is pulled to the surface. The shells are emptied on to the deck, the man rests a short time, and goes down again. This work is kept up with little or no intermission until sunset. Nothing is eaten in the morning, and nothing throughout the entire day. The Arabs say that it is impossible to dive except on an empty stomach, and the men take nothing except a little coffee perhaps, and on occasions a date or two. At sundown they have prayers, and after that come a substantial meal and time to sleep.

The diving has resulted in a pile of oyster shells, which is large or small depending on the day's success. The following morning the first item on the program is opening these shells and finding any pearls that they contain. The men sit in two rows, a row on each side of the little ship, and a small pile of shells is placed in front of each diver. They squat cross-legged, encumbered with little clothing, and the captain sits high up astern where all of the men will be under his eye as they work. The shells are opened with a thin flat knife, and the diver very

deftly searches in all the different places where experience 228●
has taught him to look for the small glistening things that bring such a high price in the world's market. It is almost impossible for any one to conceal a pearl as he works. He has scarcely enough clothing for such a purpose, and the watchful eye of the captain is hardly off him for a minute. When a pearl is found, if it is small, as most of them are, it is wiped off on to the big toe or the thumb of the diver. As the work progresses, some of the men will have quite a row of little pearls extending perhaps the whole length of their big toe, to which they adhere because they are damp. As soon as the number of these little pearls is sufficient or a really large pearl is found, everything is taken to the captain, who carefully puts all the pearls in a little bag made of red flannel and keeps them safe. When this work is completed, the diving of the day begins. The delay caused by the search for pearls in the catch of the previous day is not usually more than from half an hour to an hour.

The skill required for the labor is small, and outsiders 228
have little difficulty in qualifying as divers even with no 464
previous experience. Stories are told of Bedouins from the desert, who have never learned to swim, starting nonchalantly to dive with the more experienced men. Men of this sort usually get along all right. Occasionally they drown. Boys sometimes start out even at the age of ten to work as cooks and minor helpers, receiving at first a small fixed wage. Later they are promoted to the position of assistants and soon are divers if they so desire. The work, although it calls for little skill, does require much courage and nerve, and to be a really successful diver a good degree of aptitude and energy is essential. The energetic diver who has at the same time a con-

● 229 464 tagiously cheerful spirit is prized highly and receives extra good treatment. The season's success, however, turns only partially on the energy and skill of the men. 228 The fluctuations of the market are pure chance as far as the men are concerned, and the success of the catch is an equally incalculable factor. The weather has also to be considered, for in storms it is impossible to dive, and the "forty-day northwest wind," so called, is likely to take a large number of days out of the working calendar.

The pearl banks stretch for miles and miles in the shallow waters of the Persian Gulf. Occasionally pearl-bearing oysters may be found where the water is so shallow that the very low tides of the first and middle of each lunar month leave the bottom of the sea quite uncovered. However, most of the diving is done in water that is at least four fathoms or twenty-four feet deep. Deeper than fifteen fathoms, that is to say ninety feet, no one dives, and the Arabs insist that at greater depth no pearl-bearing oysters are found. Any rocky bottom between these two limits of depths is suitable territory in which to hunt for pearls. Certain banks are noted as affording good hunting, but most of the season's fishing partakes largely of the nature of exploration and guesswork, trying here and trying there in localities where the catch is reported as good. The number of diving boats at work is large, but the territory available is vast and there is no crowding. The banks are scattered along the Arabian coast of the Persian Gulf for perhaps three hundred miles, so the opportunity for each boat is ample.

[1123] These banks are as free as the air. No one exercises any control over them, nor claims the privilege of charging rent for their use. The nominal tax of a diver's share

5: Harrison D-4 (1912-1924) 1924 M1 Middle East

Maritime Arabs MK2
Kuwait MI 1
Bahrain MZ2

B
K
651
M
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The nominal tax of a diver's share

taken from each Kuwait boat by the Sheikh of that city is simply a tax collected from his citizens. The Bahrein Sheikh collects a small fixed charge from each boat, the amount depending upon the number of men it carries. The Persian Gulf is a British lake as far as police service is concerned, and the British administrators with their usual common sense and practical benevolence have forbidden the introduction of diving bells and dredges. As a result, the banks are worked solely by native boats. By the use of machinery and dredges, diving bells, and the like, undoubtedly the banks could be cleaned out in a few years with large profits to a few individuals, but it would mean the destruction of the whole diving community. The divers have much for which to thank Great Britain, although they do not realize it, much less appreciate it.

About five months are spent in the actual work of diving. Every three weeks or so the boat returns to the most convenient harbor to take on fresh water and food and to have the boat's bottom scraped. With these short intermissions the work is continuous throughout the entire season. The work is officially closed by order of the local sheikh on a certain day, so that the greedy captains cannot keep their men diving in water too cold to be safe. The captain then takes the season's catch to some pearl merchant, and sells it for whatever the market affords.

Not only are the pearl banks a free preserve maintained by the British for the Arab divers, but the markets where the pearls are sold are equally free. The Oriental is particularly unscrupulous in manipulating markets, and in India it sometimes happens that in spite of all the government can do, or at least in spite of all it feels at liberty to do, corners in food stuffs are engineered with sufficient success to bring much profit to the dealers and much suf- 008

turned from four months or more of exhausting work, 465
during which time they have been half starved and have 517
had no opportunity of finding enjoyment and pleasure,
legitimate or otherwise. The result[1] is precisely what 435
might be expected. Persian rugs in the bazaar go up 517
to twice their proper price as does anything else that the divers may fancy. Meat reaches the highest price of the year, and the same is true of fish, which food the divers enjoy above everything else. Gambling is all but universal. Immorality flourishes. This state of affairs lasts a month, perhaps two months. Then things gradually settle down into the regular winter stagnation until the next diving season.

The same thing happens on a smaller scale when the 517
season opens. Advances are made to the men. Feasts 288
are held. There is much good fellowship and coöpera- 465
tion as the preparations for the season are completed. The chanting of singers can be heard late into the night. The money advanced by the captains makes a great show as it is spent. Strangers come in from far and near to go out and dive with the local men, and the city wears such a gala appearance as it scarcely puts on again till the next season.

It is thus that an astonishingly attractive tinsel surface 565
is maintained over an industry and a manner of life that 228
even for Arabia are bitterly sordid and exhausting. The pearl diver's life is one of poverty, hard and cruel. In a bad season it is with difficulty that he gets enough to eat. His lot is distinctly worse than that of the date cultivator.
Diving wrecks the health as no other Arabian occupation 228
wrecks it. The high pressure of the water at great depths 164
frequently bursts the ear drums, and it is a safe conjecture that no community of equal size anywhere can show

[1] [of divers returning with their wages --Analyst]

Maritime Arabs MK2
Bahrain MZ2

M
228 such a number of chronic running ears. The lungs are
164 often affected, and all along the diving coast pulmonary
tuberculosis is common. This is not remarkable when we know that in the opening days of the season the men frequently dive in water that is so cold that they spit blood. Many return from their summer of semi-starvation and unsuitable diet of rice and dates with their gums sore and bleeding from scurvy.

Living conditions in the community* are what might be
M expected. Disease is common. The death rate is high.
511 Poverty is universal. In good years the standard of life is none too high. In bad years it is reduced almost to the starvation point. During a hard year the food of the divers is poor in quality and scanty in amount almost to the degree of partial starvation. They usually live in date-stick huts, and in the winter must frequently shiver in unwarmed houses because they have no money for fuel.

M In such communities there is little or no interest in
871 education. A diver has reason enough, one might sup-
212 pose, for wanting to know how to read and write and keep his own accounts, but it is rare that one of them knows as much as that, and apparently it is equally un-
M usual to find one who is trying to educate his children so
[868] that they may escape the slavery that binds him. The boys are frequently taken out to learn pearl diving while
B they are still under twelve. In Bahrein the American
871 Mission has tried for many years to develop educational
185 work of an elementary sort, but has found it practically
658 impossible because there is no demand for such things. The considerable Persian community in the city has made efforts from time to time to establish educational work for its own boys. The Persian schools exist for a little

*[of pearl divers -- Analyst]

721 Political troubles became acute some ten years ago or more, and for many years no foreigner was allowed to land on that coast. It was a double pleasure, then, to be invited to visit that part of Arabia four years ago. It* 567 is the one remaining nest of slavery in eastern Arabia and the district is still troublesome at times to the bearers of constituted authority, but nothing of that sort is ap- 576 parent to the visiting doctor. The rich and the poor alike are most courteous and pleasant hosts.

228 In this district* the pearl-diving system is the same as 461 in Bahrein, but the men do not work nearly so hard. They set out to work later in the season, although if the temperature of the water were the only element in their decision, they might be at work sooner, for they lie farther to the south and their water warms up considerably before that near Bahrein. They return to the shore oftener and show much less energy in their work. The pearl banks in the region of the Pirate Coast are less rich than the Bahrein banks, and as might be expected, their catch is much less valuable than that of the boats farther 514 north. It is interesting to see that divers on the Pirate Coast live at about the same general level as those in Bahrein. They could not live at a much lower level, for it would mean starvation. The larger receipts in the Bahrein area have as their only result the creation of a much richer class of pearl merchants than the similar class on the Pirate Coast.

567 464 461 Unquestionably it is the slaves who have reduced the standards of what a day's and a season's work ought to be to its present level on the Pirate Coast. Most of these slaves are negroes from Africa. A few are Baluchs from the Makran coast between India and Persia. They do not number over one-half the divers, probably far

*[The Pirate Coast and its capital at Dibai --Analyst]

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[1] [of divers returning with their wages --Analyst]

Typical date palm garden in the oasis town of Hofuf.

S.A.
245

Pearl diver with nose-clip preparing to dive beside a pearling dhow.

Unknown burial mounds dating back to ancient times near Awali—Bahrein Island.

M.A.
172
764

M.A.
228

p. 29 (b)

estimate of the number of boats operating in 1946 would be as follows: 228 464 178

Bahrein	150
Kuwait	100
Darin, Qatif, Jubail	30
Trucial coast, Qatar, and Persian ports	250
	530

Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the coincidence of the pearling season with the date harvest. Starting about June there is a migration of men northward from the Batinah Coast to the Trucial Coast; these men work the pearl fisheries. Some go north in caravans, others sail up in their *bedens* and other dhows. Opposed to the flood of men who make this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home. 228 245 221 462 484

Bertram Thomas states that a considerable percentage of the army of men annually migrating northward to the Trucial Coast is composed of slaves.[17] These Batinah contingents are usually accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.[18] 228 567 464

Pearl fishing is a seasonal occupation, as the divers must wait for warm summer water before starting to dive. Probably few people realize there is a winter in the Persian Gulf, and that the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon 228 464 132

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

[18] Ibid., p. 143

Kuwait MI 1

K
MA

his vessel pays practically no port dues. His dates can therefore 438
be warehoused in the dhow, until the market can easily absorb 439
them. 505

The dhow trade is "native" trade, a stubborn plant which has MA
been growing a long, long time. Nearly all the cargoes carried in 439
dhows are for the native bazaars, and almost never for European 443
account. Much of the cargoes consists of goods which the dhow captain himself, or some merchant or merchants travelling with him, sells for his own profit. The dhow is a peddler, as well as a carrier; a storehouse, as well as a ship; a means of livelihood to travelling merchants, as well as to her crew proper. Basra dates, though the most important outward cargo,[1] are only one source of revenue: there are a host of others, not necessarily always legitimate.

Kuwaiti owners of date plantations on the nearby Basra river K
play a considerable part in the financing of deep-sea dhows, MA'
though in most cases the captains, called *nakhodas*, are at least [245] ●
the nominal owners. It suits the merchants well that the *nakhodas* 456
should regard themselves as the owners, for this provides them 471
with a cheap form of insurance. If the dhow be lost it is the 784
nakhoda's loss, and not the merchant's, for the poor captain must 466
pay back not only the value of the dhow but the advance of freight given him to finance his voyage. Since Islam forbids all forms of ordinary insurance, this arrangement is to the merchant's liking. The *nakhodas* must accept it, for in most cases there is no other way by which they can acquire a big dhow.

In Kuwait, immediately prior to the outbreak of World War II, there was beginning to be some restiveness about this, and an association of the *nakhodas* had the temerity to issue its demands upon the merchants. These included payment of demurrage when unduly delayed at the loading berths in Basra (a dhow might be kept for weeks waiting for her cargo), a sliding scale of freights for different ports instead of the customary flat rate of 1.5 or 2 rupees a package regardless of destination, liability for the return of advances to cease with the loss of the ship, two competent officers for every seagoing dhow, and so forth. The demands represente

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[1] Crew requirements and the very measurements of the dhows themselves are reckoned in terms of dates. A sailor to each 100 packages is the general rule, in Kuwait, and a dhow is spoken of there as having a capacity for 2,000 packages of dates, rather than as being of 100 tons burden. MA
804
565

226 one in each hand (Fig. 9), he works the net around the edge of the stockade and empties the fish into palm-leaf baskets (Figs. 10 and 11). Most of the fish weigh less than a pound, but it is not unusual for a weir to yield many hundreds of pounds of fish in a tide change, though sometimes only enough are caught to feed the fishermen. The fish are usually sorted into two or three grades and are often sold on the spot. Several times I saw sharks as large as six feet trapped in the stockade; extracting these monsters was a delicate task. Most of the cuttlefish used as bait in the basket fishtraps come from these palm-stem fishweirs.

There seems to be a direct correlation between the amount of fish caught in a weir and the wind velocity, at least on the Ras Tanura peninsula. The Arabs can estimate their catch simply from the atmospheric conditions prevailing before low tide: if the *shamal*, the strong north wind, has been blowing, the haul is sure to be good.

I never saw the effect of the wind fail. In the fall jumbo shrimp, equal to any found in the Gulf of Mexico, are caught in these weirs. If there had been little wind, the catch would be small, but if the wind had been considerable, there were sure to be several dozen nice shrimp. The 10 weirs on the Tarut Bay side of Ras Tanura yielded at the most only several dozen shrimp, most of which came from two funnel weirs; the shrimp that appeared in local markets in large quantities came from the weirs on the flats
● [251] around Qatif. The shrimp in Arabian markets is sun-dried, so that it can be stored and sold in any season.

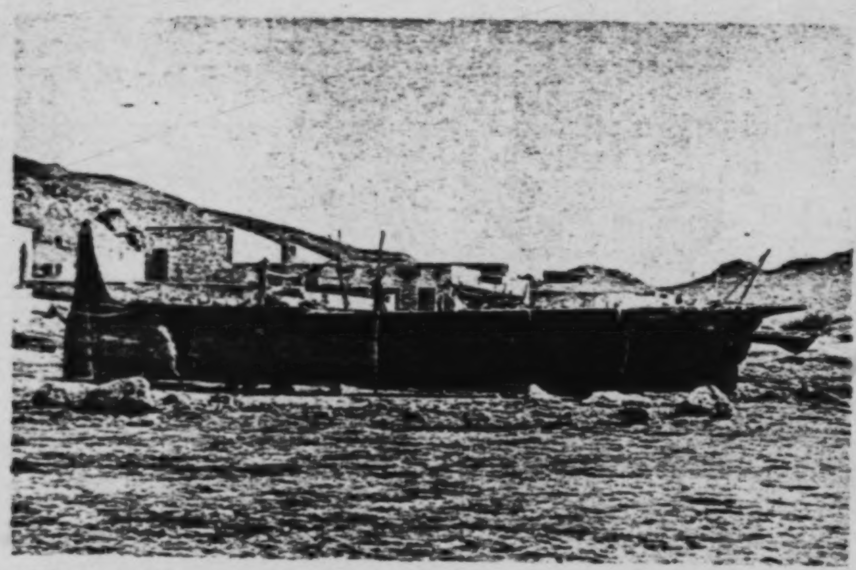
As a rule, the men who work a fishweir get half the profits, and the owner gets the other half. The profits are figured by deducting from the gross return the cost of the workers' food and of the material required to maintain the weir. If a trap fails to produce, the owner sometimes supplies the tenders with cash, which must be repaid later.

In summer the daylight low tide in the Persian Gulf at Ras Tanura is about two feet higher than the minimum, in February. The water does not get low enough in the weirs to trap fish effectively, and the summer catch
[228 is therefore poor. Usually trap tenders are assigned to pearl diving and rock
464] mining, possible only in the warmer months; one man is left to collect the small catch and keep the weir in condition. When Ramadan, the great Moslem fast month, falls in summer, the Arabs on Tarut Bay allow their fishweirs to fall into disrepair. It is surprising how fast a weir will disintegrate under even the slight wave action in a sheltered area such as Tarut Bay. In 1945 there were several strong shamals during Ramadan (then the last two weeks in July and the first two in August), which, coupled with the

[Text continued on p. 393]

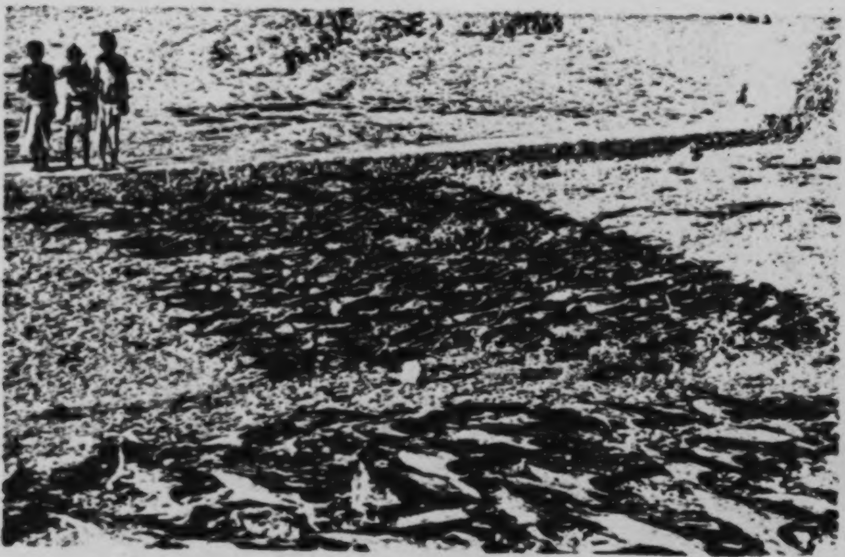
PLATE 18

501



The Omani who coast down to Africa and fish along the way haul their *bedans* out periodically, lay the fish out to dry, and oil the hulls; this one is at Mukalla

251



Tuna fish drying in the sun at Mukalla. The Omani carry large quantities of dried fish down the South Arabian and East African coasts, coasting down on one monsoon and back on the other

[FACING P. 190B]

White radishes	100	5	262
Lemons	40	5	
Other fresh vegetables	400	15	
10 live sheep	1100	40	
15 live sheep and goats	1500	80	
	Total Rs.	1502	

It should be noted that rice constitutes one-third of the cost. The other great staple at sea—fish—is not listed accurately, as most of it is caught fresh; probably between two thousand and three thousand pounds of fresh fish was eaten. It should also be noted that no charge occurs for water. The dhow will take a tank of bad water rather than pay for it.

The Arab dhow, regardless of its size, always has a fish-line overboard, 226 and it is not uncommon to see half a dozen lines overboard. I have caught many fish myself trailing a line from a dhow in the Persian Gulf. Villiers[88] states that fishing off the whole African coast is particularly good and that it is not uncommon for the many lines trailed from a Kuwait *bhum* to net twenty to thirty large fish a day. The fish not eaten are cleaned by [251] splitting, are pounded in salt, and then hung in the sun to dry; the sailors never bother to scale the fish.

The galley on an Arab dhow is simply a spot on the deck. The stove 252 consists simply of an open-sided box with some sand and cooking stones 501 on the bottom (see Plate 21—top left). The larger the dhow the larger the fire-box. The cook cooks everything here with wood fires of palm wood, brush, or driftwood.

On dhows of South Arabia and the Gulf of Aden ports there is also a bread oven. I have never seen these on dhows from the Persian Gulf or Gulf of Oman. The oven consists of a wide-mouthed pot perhaps fifteen or eighteen inches in diameter; this pot is put inside a barrel about two and one-half or three feet in diameter and the space around the pot is filled with sand (see Plate 21—top right). The barrel is firmly lashed together and then is usually securely lashed to the deck. To bake bread, the cook builds a fire in the bottom of the pot and allows it to burn down to the coals. Then he takes a flat piece of dough like a large pancake and pastes this on the inside of the pot; the heat in the walls of the pot and the coals bake the bread. This is the Arab *khubuz*, one of the staples of 262 the Arab at sea as well as on land.

VI

It is difficult for one totally unfamiliar with the Arab East to under- 426 stand the economic system of the Arabs. The tenets of Islam prevent any

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[88] A. Villiers, *SS*, p. 130.

Kuwait MI1
Zanzibar FM1

that any new crew members in Arab ships joined voluntarily; MA
vessels must not be overmanned, and crew and passenger lists 505
must be provided and in order; ships must be surveyed, and kept 567
seaworthy; and *nakhodas* must be certificated. As for the last, the Z
port officials conduct examinations, and the general principle 656
seems to be that if a man is capable enough to bring a dhow down
to Zanzibar, certificate or no certificate, he can also be trusted to
sail her away again. But the fee for examination is fifteen shillings,
and the Arabs complain about it.

We touched at Zanzibar again after loading in the Rufiji, re- K
embarked our *nakhoda* and took aboard a few Swahili school- MA
teachers as passengers (they proposed to hire an automobile at 439
Kuwait to take them to Mecca), filled the decks with coconuts 505
and cases of soap and vermicelli, and departed toward the Persian
Gulf again with the first of the broken weather at the end of the
northeast season. We did not await the coming of the true south-
west monsoons, for it sets in hard; we sailed direct to Muscat, in
twenty-six days.

Muscat was depressed and there was no trade there, not even
smuggling. All that changed hands, as far as I could see, was a
box of Maria Theresa thalers, enormous Austrian coins minted in
London for the Omani and available in Zanzibar at a price less
than the exchange rate in Muscat. The Arabs turned everything
to profit and were prepared to sell anything, even the ship. The [K
sailors' pastime in the Rufiji was buying lemons — a thousand M.A.
for a shilling — and converting them into sherbet, which they 252]
hawked in the *suq* at Kuwait throughout the summer.

Our cargo of mangrove poles sold at Bahrein, the ship returned
to Kuwait, to lay up inside a coral breakwater until the new sea-
son's Iraqi dates ripened and it was time to go out again. At K
Kuwait, when all her people were returned — several relations of MA
the *nakhoda* had dispersed from Zanzibar back to Lamu and 451
Mogadishu to collect debts — a general balance sheet of the 465
whole round voyage was struck, the profits computed carefully, 439
and divided by a system of shares arranged traditionally. It was 505
not a straightforward statement of income and expenditure; I
never saw or heard of any piece of Arab seafaring business which
was as simple as that. It was all complicated by prior advances,

point of vantage. Before every prayer the Arabs first perform the required 788
Moslem ablutions of washing their hands, face, feet, etc., in sea water; then they go through the prayer ritual facing towards Mecca with their headcloth spread in front of them as a prayer rug. It is for determining the direction of Mecca that the compass on a large dhow is often most used! The first prayer is the dawn prayer said in the first greying light of dawn; the morning prayer takes place when the sun is close to the meridian; the afternoon prayer is called when the shadows begin to lengthen; the evening prayer is said shortly after the sun sets; finally, the night prayer ends the day several hours after sunset. The above applies to Moslem Persians and Indians as well as to the Arabs; obviously it does not apply to Hindus or sailors of other religions.

Eating is intimately related to Islamic religion for Arabs and other 261
Moslem sailors, as their three meals come directly after the dawn, the 262
morning, and the evening prayers. In the month of Ramadhan all faithful
Moslems neither drink nor eat during the daylight hours; however, 264
during Ramadhan all activities on land and on sea usually hit a low ebb. 785
In other months breakfast consists for the Arabs of little more than a piece of unleavened bread with some sweet tea or water with which to wash it down. Lunch has more to offer, consisting of a mess of boiled rice with a flavoring of *ghee* (clarified butter) and curried or baked fish (if the ship has any fish aboard). The main portion of the meal is rice, which is served on a huge tray, or often simply on a palm leaf mat. The crew gathers around several of these trays or mats and makes quick work of the food, using no implements other than their right hand. They take a little fish (or meat if they are that fortunate), ball a small handful of rice around it and toss the ball deftly into their mouth, usually without losing a crumb. Nothing is ever wasted, as someone always scavenges the last morsel. Supper is essentially the same as lunch.

Often a feast is in order in port; this always calls for the slaughter of a 527
sheep (or goat), a number of which are always kept alive on board. The 252
sheep is usually slaughtered at dawn and is virtually dragged from its skin into a large iron pot, where it is boiled in water. The sheep or goat is the *pièce de résistance* and is served whole on a huge tray of rice. For a feast, a curry flavoring or raisins are often mixed with the rice. Various delicacies from the sheep, such as the heart, liver, lungs, and kidneys, are
cooked separately and served in side dishes. As the feast starts, the sheep 264
is methodically torn apart limb from limb and fiber by fiber. The meat is always eaten in the same manner: rice is balled around small bits of meat and tossed deftly into one's mouth with the right hand. In pulling

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White radishes	100	5
Lemons	40	5
Other fresh vegetables	400	15
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	Total Rs.	1502

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[88] A. Villiers, *SS*, p. 190.

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feet in diameter, it is easily seen under water, and thus more 136
easily avoided than the *dawl*. The Arabs have no fear of the sea
turtle and they relate that when they find one of these on the
pearl banks, they ride it to the surface by grabbing it behind the
neck and directing it upward.

But the dangers from sharks and devilfish (rays) are slight 164
compared to the physical danger resulting from simply driving 147
oneself past the limit of human endurance. The "bends" are a 752
common affliction among the divers and may cause severe pains
in the joints, paralysis, or even death. Suppuration of the eardrums
and rheumatism are also common. The divers may lose
blood from surfacing too quickly or from staying under too long;
Frederick Simpich tells of seeing a man come up from a 10-fathom
dive bleeding at the nose as if someone had hit him with
a ball bat.[31] Whitelock states that the divers of the Trucial Coast
were very emaciated and suffered from inflamed eyes, which
they treated with antimony.[32]

Divers never eat while working, except for a sip of tea or 262
water, as food would cause nausea. When the sun has sunk so 147
low that diving stops, they eat a few dates or a little rice and
drink a little tea, but that is all. This is one of the reasons why
they become so weakened and emaciated during a season. Sleep
is the only energy builder the divers have.

OPENING THE OYSTERS

With dawn the first activity of the day is the opening of the 228
oysters caught the day before. By this time the oysters have been
out of the water long enough for their shells to open, so that one
does not have to fight them. The oysters are not divided according
to divers, but are simply piled in sacks on the deck, so that
no one knows exactly who caught the one that may contain the
great pearl. After the valves are parted, the openers knead
through the flesh, extract any pearls, and throw the shells and
the meat overboard. Less than one-third of the oysters yield
pearls and these are mostly "seed pearls," those very small irregularly-shaped
pearls which might well be called "pearl dust."

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[31] F. Simpich, *National Geographic Magazine*, vol. 36 (1919), pp. 369-93.

[32] H. H. Whitelock, *op. cit.*, pp. 38, 44.

MARINE INDUSTRIES OF EASTERN ARABIA

RICHARD LeBARON BOWEN, JR.

361 226 503 315 THE Persian Gulf coast of Saudi Arabia is desolate in the extreme: in many places one travels along the beach for dozens of miles without seeing a living soul. But there is a sprinkling of old coastal towns, whose inhabitants for the most part gain their livelihood from the sea. Among them are Jubail, long a port of entry for the capital city of Riyadh, 235 miles inland; Dammam, seaport for the Qatif and Safwa oases (a deep-water pier has recently been constructed at Dammam); Al Khobar and Oqair, ports for the great oasis of Hofuf (Hasa). To these have been added of late years Arabian American Oil Company settlements at Ras al Mish'ab (a construction camp and port facilities), Nejma (a refinery and camp), and Ras Tanura (pipeline terminus and cargo wharf).

FISHING

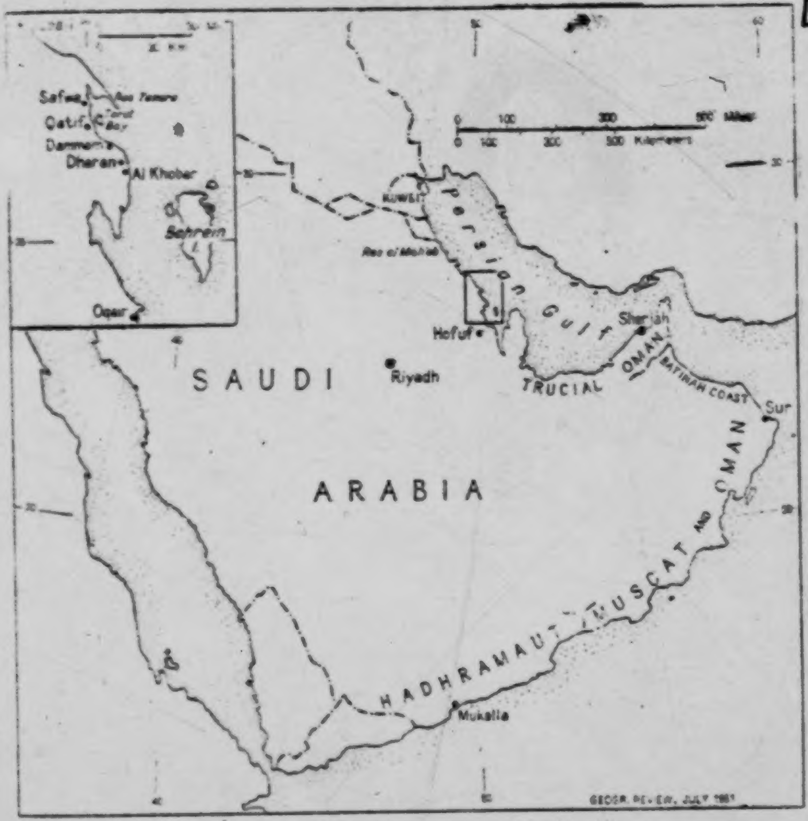
226 262 Foremost among the marine activities of the older coastal towns is fishing. Although there are far fewer species of fish in the Persian Gulf than in the Indian Ocean, they are present in greater numbers, particularly the porgies, than one might expect in so warm a body of salt water, and fish form a welcome addition to the diet in a land where food is pitifully scarce.

226 [857 504] Fishing methods range from a simple hand line to large and complicated fishweirs. On land the hand line is used mainly by small boys, who, like the small fry of any other country, enjoy fishing. Since there is an almost complete lack of jetties and piers, these young fishermen have to stand on the beach and heave their weighted lines as far as they can (Fig. 2). When the fish are running, these youngsters line the shores, and their catch is sometimes sizable. Hand lines are indispensable on every dhow and are thrown out as soon as the boat is in open water.

A more advanced type of fishing uses the throw net—a circular net about 16 feet in diameter made of quarter-inch-mesh netting. The periphery is weighted with small lead weights, then doubled back toward the center and tied at 12-inch intervals to form a continuous pocket some six inches deep. The fisherman walks in knee-deep water at low tide, holding his net —which he has folded and gathered with the perfection of a parachutist—

➤ DR. BOWEN is a chemical engineer now resident in Providence, R. I. His field experience in Arabia includes three years with the Arabian American Oil Company (1945 to 1947) and some months as technical and engineering adviser to the Arabian expedition of the American Foundation for the Study of Man (1950).

[131
361]


Safwa
Ras Tanura
Tarut Bay
Qatif
Dammam
Dharan
Al Khober
Bahrein
Oqair
0 100 300 500 Miles
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Persian Gulf
Ras al Mishab
Hofuf
Riyadh
Sharjah
OMAN
TRUCIAL
BATINAH COAST
Sur
SAUDI
ARABIA
MUSCAT AND OMAN
HADHRAMAUT
Mukalla
GEOGR. REVIEW, JULY 1951

Fig. 1—Location map. Inset shows places mentioned in the text.

with both hands and his teeth. Whe[illegible] spots a school of fish, he flings the 226
net into the air with one arm (much like a man sowing seed) and a snap of his head. The net opens out flat and drops on the water; the weights carry the outside to the bottom faster than the center. The fisherman then picks up the net by the center, and any fish under it immediately swim toward the edge and are trapped in the pocket. He keeps pulling the center through one hand and folding it up, and when he has finally gathered in the whole net, he carefully removes the fish flopping around in the pocket, puts them in a palm-leaf basket, and starts all over again.

The Arabs also use wire and palm-leaf basket fishtraps (Fig. 4). These 226
are oval-shaped, from two to five feet long, with a cone-shaped entrance 262
on each end through which the fish cannot squeeze out. The traps are usually baited with cuttlefish, forbidden to the Arabs by a strict interpretation of

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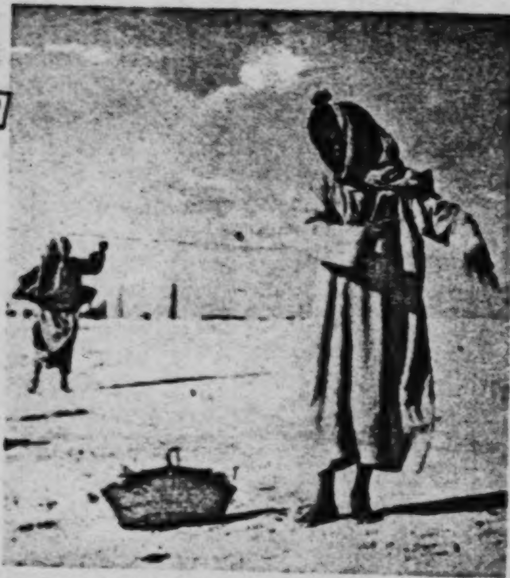
[857]



226

FIG. 2—Arab boys fishing with hand lines. When the fish are running, small boys often line the shore by the dozen.

the Koran, but a particularly juicy delicacy from a fish's point of view. The Arabs dot the shallow water with these basket traps at points where feeding appears good; the edges of small coral reefs are favorite spots.

The Arab fisherman never marks his traps with floats as the American lobster fisherman does, because he fears they will be plundered; he must remember the location of each trap. Where he cannot see the bottom, he suspends a float several feet below low-tide level. To tend his traps, this Arab rows his small boat up and down at low tide until he spies his trap or float and hooks it with a pole; in shallow water he sometimes dives for the trap. I once watched a crew of three fishermen off Râs Tanura; they seemed to know the approximate location of each trap in the 30 feet of water, but they spent as much as a quarter of an hour peering into the water to find each submerged float. These men used the largest wire traps I saw in the Persian Gulf, and their catch at times was astounding.

The Arabs on the east coast of Arabia seldom use seines, though on Bahrein Island I saw several drying in the sun. However, large communal seines have apparently been used on the Batinah Coast of Oman; for Thomas[1] relates that "there, a hundred fishermen were hauling ashore a communally owned net, the vast extent of which was marked by distant bobbing floats . . . In contrast, a lone fisherman, far out, monotonously cast his circular hand-net." On the Hadhramaut coast of South Arabia the fishermen also use large seines. At Mukalla I saw a two-and-a-half-inch-mesh net 190 feet long and 20 feet wide; a narrower net had a mesh of five inches. These wide-mesh nets are used for sharks. Farther east on this coast, at Jazir Bay, the fishermen set their seines by swimming out to sea on inflated sheepskins!

13

[1] Bertram Thomas: Alarms and Excursions in Arabia, London, 1931, p. 156.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164
752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262
461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

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312
502
438 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228
442
439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they
all end up in Bombay

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, Amer. Museum Novitates, No. 1390, 1949.

cargo of fish if the local supply is not sufficient, and fish their way down 439
the Arabian and African coast, selling fish wherever they can. Then they 226
do the same thing on the way back. Mukalla is a favorite stopping place
on the way down to Africa; I have seen dozens of *bedans* from Sur come
into Mukalla and lay out their catch of shark or tuna on the beach to dry
while they beached their dhows and put a coat of shark liver oil on their
hulls (see Plate 18—top and bottom). Shark is a favorite Arab food; the [262]
flesh is cut off in strips or slabs and dried, while the liver is saved for its
oil. The Arabs have little use for the tails or fins of the shark, but they
are all meticulously saved and eventually find their way to China via
India.

Thus these fish-bearing dhows from Oman start their trading venture
from their home port, carrying a product of the port, and never carry
other cargo; they trade fish from Sur to Zanzibar and back. For this trade [501]
they apparently always use the primitive *bedan*, usually ranging from fifty
to sixty feet in length. The Suris export dates from Oman, or go to Basra
for a cargo; when carrying dates they use large *sambuks* and *baghlas*.

In contrast to Arab and Persian ships which sail along the coasts the 439
whole way, whether going to India or Africa, Indian vessels usually sail 487
straight from India across the ocean for South Arabia or Africa with consignments of goods from Indian exporters at specific ports. Only rarely do they carry dates; their usual cargo consists of the products of India. From the Malabar coast they may carry coir rope stuffs, coir matting, teakwood, teak dugout canoes, coconuts, spices, cement, bricks, or tiles, while from Bombay they may pick up cotton piecegoods, groundnut oil, or tea. Most of the Indian ships that voyage to Arabia or Africa come from the Gulf of Cutch; few if any craft from Bombay or the Malabar coast carry this trade today.

In vivid contrast to the Arab date cargo and Indian cargo, which is usually on consignment, the replacement cargo for the rest of the voyage for the average Arab dhow is purchased by the *nakhoda* from the profit made on the date freight, for sale at the best market. After its date cargo has been discharged, the dhow becomes a trader in every connotation of the word, picking up and selling cargoes as she coasts south along the South Arabian and East African coast.

Sometimes the *nakhoda* may pick up a small cargo of partially spoiled dates to unload on the Africans; these the crew may wrap meticulously in fancy wrappers. At Aden the dhow may take on salt, sugar (from Java), rice (from Rangoon), canned goods, hardware, kerosene, or cotton goods and prints, and from the Hadhramaut coast the cargo may be dried shark

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264 apart the sheep only the right hand may be used, as the Moslem left hand is reserved for less sanitary duties.

Towards the last of the feast, the host seizes the head, rips out the tongue, gouges out the eyes, removes the brain by smashing the head on the floor, and tosses these delicacies on the plates of the guests of honor. To one unaccustomed to the ways of the East, such a scene might look primitive and barbaric, and might remind one of a pack of animals crouched around their prey. It is true that the Arab meal lacks the decorum of a Western table and one needs more than a finger bowl when finished, but once one is accustomed to the Arab way of life, an Arab feast is most satisfying! Before and after the feast one is served the ubiquitous too-bitter Arab coffee and too-sweet tea. Often during the regular day, coffee and tea break the long hours between meals.

Villiers made a very careful survey of the food consumed for 270 days on a Kuwait *bhum* by the thirty men aboard. The total cost was 1502 rupees, which was an average of about 5.5 American cents per man per day (at a rate of exchange of $0.30 per rupee). Villiers' summary of the food consumption is as follows:[33]

262

Commodity	*Cost per Unit*	*Number of Units*	*Total Weight*[34]	*Total Cost Rupees*
Dates	3 rupees/package	40	3360 lbs.	120
Rice	8-10 rs/bag	53	8900	500
Flour	6 rs/bag	12	1800	72
Sugar	12 rs/bag	7	1570	84
Dried fish			500	40
Dhall (Indian Corn)	15-16 rs/bag	6	1010	90
Salt	2 rs/bag	3	670	6
Tea			110	50
Coffee			220	30
Ghee (clarified butter)	10-20 rs/tin	9	360	120
Saleet (oil)			400	50
Pickled stuffs			100	50
Chilis			80	10
Onions			1600	50
Potatoes			480	30
Cloves (for coffee)			40	5
Ginger (for coffee)			100	5
Tomato essence			40	15
Canned milk			150	20
Sesame seeds (for bread)			30	5
Lady-fingers and peppers				5

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[33] Ibid., p. 427.

[34] These weights were estimated by this author, using the average weight of the units, i.e., packages (of dates), bags (which vary for every commodity), tins, etc., that were in common use in Aden in 1950.

White radishes	100	5	262
Lemons	40	5	
Other fresh vegetables	400	15	
10 live sheep	1100	40	
15 live sheep and goats	1500	80	
	Total Rs.	1502	

It should be noted that rice constitutes one-third of the cost. The other great staple at sea—fish—is not listed accurately, as most of it is caught fresh; probably between two thousand and three thousand pounds of fresh fish was eaten. It should also be noted that no charge occurs for water. The dhow will take a tank of bad water rather than pay for it.

The Arab dhow, regardless of its size, always has a fish-line overboard, 226 and it is not uncommon to see half a dozen lines overboard. I have caught many fish myself trailing a line from a dhow in the Persian Gulf. Villiers[88] states that fishing off the whole African coast is particularly good and that it is not uncommon for the many lines trailed from a Kuwait *bhum* to net twenty to thirty large fish a day. The fish not eaten are cleaned by [251] splitting, are pounded in salt, and then hung in the sun to dry; the sailors never bother to scale the fish.

The galley on an Arab dhow is simply a spot on the deck. The stove 252 consists simply of an open-sided box with some sand and cooking stones 501 on the bottom (see Plate 21—top left). The larger the dhow the larger the fire-box. The cook cooks everything here with wood fires of palm wood, brush, or driftwood.

On dhows of South Arabia and the Gulf of Aden ports there is also a bread oven. I have never seen these on dhows from the Persian Gulf or Gulf of Oman. The oven consists of a wide-mouthed pot perhaps fifteen or eighteen inches in diameter; this pot is put inside a barrel about two and one-half or three feet in diameter and the space around the pot is filled with sand (see Plate 21—top right). The barrel is firmly lashed together and then is usually securely lashed to the deck. To bake bread, the cook builds a fire in the bottom of the pot and allows it to burn down to the coals. Then he takes a flat piece of dough like a large pancake and pastes this on the inside of the pot; the heat in the walls of the pot and the coals bake the bread. This is the Arab *khubuz*, one of the staples of 262 the Arab at sea as well as on land.

VI

It is difficult for one totally unfamiliar with the Arab East to understand the economic system of the Arabs. The tenets of Islam prevent any 426

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[88] A. Villiers, *SS*, p. 130.

point of vantage. Before every prayer the Arabs first perform the required 788
Moslem ablutions of washing their hands, face, feet, etc., in sea
water; then they go through the prayer ritual facing towards Mecca with
their headcloth spread in front of them as a prayer rug. It is for determining
the direction of Mecca that the compass on a large dhow is often most
used! The first prayer is the dawn prayer said in the first greying light of
dawn; the morning prayer takes place when the sun is close to the meridian;
the afternoon prayer is called when the shadows begin to lengthen;
the evening prayer is said shortly after the sun sets; finally, the night prayer
ends the day several hours after sunset. The above applies to Moslem
Persians and Indians as well as to the Arabs; obviously it does not apply
to Hindus or sailors of other religions.

Eating is intimately related to Islamic religion for Arabs and other 261
Moslem sailors, as their three meals come directly after the dawn, the
morning, and the evening prayers. In the month of Ramadhan all faithful 262
Moslems neither drink nor eat during the daylight hours; however, 264
during Ramadhan all activities on land and on sea usually hit a low ebb.
In other months breakfast consists for the Arabs of little more than a 785
piece of unleavened bread with some sweet tea or water with which to
wash it down. Lunch has more to offer, consisting of a mess of boiled rice
with a flavoring of *ghee* (clarified butter) and curried or baked fish (if the
ship has any fish aboard). The main portion of the meal is rice, which is
served on a huge tray, or often simply on a palm leaf mat. The crew
gathers around several of these trays or mats and makes quick work of
the food, using no implements other than their right hand. They take a
little fish (or meat if they are that fortunate), ball a small handful of rice
around it and toss the ball deftly into their mouth, usually without losing
a crumb. Nothing is ever wasted, as someone always scavenges the
last morsel. Supper is essentially the same as lunch.

Often a feast is in order in port; this always calls for the slaughter of a 527
sheep (or goat), a number of which are always kept alive on board. The 252
sheep is usually slaughtered at dawn and is virtually dragged from its
skin into a large iron pot, where it is boiled in water. The sheep or goat
is the *pièce de résistance* and is served whole on a huge tray of rice. For a
feast, a curry flavoring or raisins are often mixed with the rice. Various
delicacies from the sheep, such as the heart, liver, lungs, and kidneys, are
cooked separately and served in side dishes. As the feast starts, the sheep 264
is methodically torn apart limb from limb and fiber by fiber. The meat
is always eaten in the same manner: rice is balled around small bits of
meat and tossed deftly into one's mouth with the right hand. In pulling

264 apart the sheep only the right hand may be used, as the Moslem left hand is reserved for less sanitary duties.

Towards the last of the feast, the host seizes the head, rips out the tongue, gouges out the eyes, removes the brain by smashing the head on the floor, and tosses these delicacies on the plates of the guests of honor. To one unaccustomed to the ways of the East, such a scene might look primitive and barbaric, and might remind one of a pack of animals crouched around their prey. It is true that the Arab meal lacks the decorum of a Western table and one needs more than a finger bowl when finished, but once one is accustomed to the Arab way of life, an Arab feast is most satisfying! Before and after the feast one is served the ubiquitous too-bitter Arab coffee and too-sweet tea. Often during the regular day, coffee and tea break the long hours between meals.

Villiers made a very careful survey of the food consumed for 270 days on a Kuwait *bhum* by the thirty men aboard. The total cost was 1502 rupees, which was an average of about 5.5 American cents per man per day (at a rate of exchange of $0.30 per rupee). Villiers' summary of the food consumption is as follows:[23]

262

Commodity	*Cost per Unit*	*Number of Units*	*Total Weight*[24]	*Total Cost Rupees*
Dates	3 rupees/package	40	3360 lbs.	120
Rice	8-10 rs/bag	53	8900	500
Flour	6 rs/bag	12	1800	72
Sugar	12 rs/bag	7	1570	84
Dried fish			500	40
Dhall (Indian Corn)	15-16 rs/bag	6	1010	90
Salt	2 rs/bag	3	670	6
Tea			110	50
Coffee			220	30
Ghee (clarified butter)	10-20 rs/tin	9	360	120
Saleet (oil)			400	50
Pickled stuffs			100	50
Chilis			80	10
Onions			1600	50
Potatoes			480	30
Cloves (for coffee)			40	5
Ginger (for coffee)			100	5
Tomato essence			40	15
Canned milk			150	20
Sesame seeds (for bread)			30	5
Lady-fingers and peppers				5

[23] Ibid., p. 427.

[24] These weights were estimated by this author, using the average weight of the units, i.e., packages (of dates), bags (which vary for every commodity), tins, etc., that were in common use in Aden in 1950.

PLATE 20

396

The crew that is to sail a new dhow must rig the ship and make the sails first. The photograph shows a set of sails being made at Aden

505
283

Rope making is one of the odd jobs that crew members perform. Here an old sailor makes some rope using his toes as well as his hands

Facing P. 196 (B)

[285] The diver holds onto
228 another line to which is tied an open-weave palm leaf basket for the oysters; sometimes the diver has the oyster basket tied to his waist or around his neck and has the line tied to his body. When the diver is ready to come up, he gives several tugs on the rope. Thus the diver does not have to waste his valuable energy in swimming up or down. When he first reaches the bottom, he attempts to go out perpendicularly from the boat, frantically plucking all the oysters he can see before his air gives out. The diver usually crawls on one hand and one foot, using the other foot to propel himself and his free hand to collect the oysters.

228 292 The divers wear a horn noseclip similar to a clothespin; this keeps the water out of their noses and enables them to hold their breath longer. Sometimes a diver will stuff cotton or beeswax into his ears to keep the water out. A set of leather finger thimbles protects his fingers from coral and other sharp objects; he wears only a loin cloth. This is the equipment universally used in the Persian Gulf, whether the diver is out of Kuwait, Bahrein, the [164] Trucial Coast, or Persia. These divers wear no goggles and many have impaired vision from trachoma, so their efficiency is cut down considerably. It is strange that the Arabs have not added at least eye socket goggles, which the South Sea Island and Philippine pearl divers have eagerly accepted.

228 461 Alan Villiers states that the Kuwait pearl divers make ten consecutive dives and then rest while a "substitute" makes ten; these two divers have the same attendant.[34] Divers in other parts of the Gulf work continuously, taking a rest all together at certain predetermined times, sometimes corresponding with prayer-time.

The diver stays under about a minute, then rests for two or three.[35] Ten dives would consume about three-quarters of an

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[34] A. Villiers, *op. cit.*, p. 392.

[35] The average length of time that a diver stays under water has long been a controversial question. Alan Villiers (*op. cit.*, p. 392), who spent two months with the Kuwait pearling fleet, states that the divers averaged about a minute, ranging from 40 to 90 seconds. O'Shea (*op. cit.*, p. 137), spending some time among the Trucial coast pearlers, states that divers there remain under water from 40 to 75 seconds, also averaging about one minute. Whitelock (*op. cit.*, p. 43), who visited the Trucial coast pearl fisheries one hundred years ago, stated that the divers averaged about 40 seconds under water, but that he never saw them remain over a minute. Hugh Smith (*op. cit.*, p. 183) states that in the Ceylon fisheries the Arabs are the best divers, staying down from 60 to 75 seconds, with a normal maximum of 90 seconds, and that there is an authentic case of an Arab staying under 109 seconds in seven fathoms of water. In any

FISHWEIRS

[285] 226 The largest catch of fish on the Persian Gulf coast of Saudi Arabia and Bahrein Island comes from huge weirs, made from the stems of palm trees. The Arabs build these fencelike traps by driving a steel bar into the mucky bottom and inserting a palm stem into the hole as they withdraw the bar (Fig. 13); the stems are spaced close enough so that no fish can pass through and are tied together. There are two types of weir: a funnel type and a spear type.

[133] In the Persian Gulf the maximum tidal drop is about eight feet. The fishweirs are built so that at low tide there is only a few feet of water on the offshore end of the weir. Where the ebbing tide sets up a definite current, the funnel type (Fig. 7) is used, placed so that the current washes through the trap. The fish carried along in the current are forced through the funnel into the stockade of the weir, the entrance of which is out of water at low tide. These weirs are usually built with the central axis parallel to the shore; however, in Tarut Bay many are not near any shore but are set across tidal currents in shallows. Sometimes several traps are set in a row. It is not exceptional for the ebb current in Tarut Bay to reach three knots in some places.

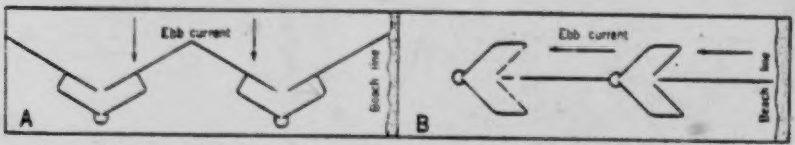

FIG. 7—Diagrams showing the two types of fishweir. The funnel type (A) catches fish that are washed into the enclosure on an ebbing tide. The spear type (B) is most effective in the case of fish moving parallel to the shore, since the ebbing tide causes only a slight current. Both types are found either singly or in a row, as illustrated.

Where the tidal ebb sets up merely a slight motion, the spear type of weir (Fig. 7) is used; the axis is oriented at right angles to the shore. As with the funnel type, several weirs are sometimes set in a row. Most of the fishweirs on Bahrein Island are of this type. The fish swim inshore on a flooding tide and out on an ebbing tide, and thus tend to work into the weirs; these traps are most effective in catching schools of fish swimming parallel to the shore. This type of weir is less effective than the funnel type, because its action is less positive.

Thus when the tide has gone out, the fisherman has a stockade of fish. He enters this stockade, or "head" of the weir, which is 10 to 15 feet in diameter (Fig. 8), with a net hitched to two 3-foot palm-stem poles. Holding

[text continued on p. 391]

K
Negro origin, the descendants of slaves, though not now slaves MA
themselves. Many others are of Iranian origin. Almost none are 505 565
Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait,
the callings open to the low-class Iranian are restricted to portering,
pearling (either as diver or as tender), and sailing. Both
Iranians and Negroes work splendidly, are loyal, competent, and
well disciplined.

As the *nakhoda* class is tied to the merchant by a structure of MA 565
debt, so also are the sailors tied to the *nakhoda* class in the same 426
way. All deep-sea sailing is paid for on a shares system, and there 465
are no wages. Often the *nakhoda* of the deep-sea dhow has an interest 228
in a pearling vessel (though not now to anything like the
same extent as in former years), and the sailor may be bound to 428
him through pearling debts, either his own or inherited. The
more iniquitous practices in the pearling business structure have
long been on the way out, largely because of the excellent example
set at Bahrein, but the debt tradition stands and is almost impossible
to eradicate.

MA
The sailors go to sea because they know no other life, and they 505
make a wretched living by incredibly difficult methods. They 511
have no possessions other than the clothes they stand in, and 342
one or two spare gowns, a good headcloth, and a few sarongs. 291 ●
Their toothbrush is the twig of a tree; their ablutions are made 515
five times daily at a mosque well, or in the sea; they know no 501
shelter and rarely have a bed. The younger seamen, I have noticed, 565
often have no home other than the *suq*, or native bazaar,
where they coil down in their rough cloaks for a night's sleep on a
bench in a cheap coffee shop, or in the sand. At sea, they stretch
out on the deck, beneath the stars, for there is no such thing as
accommodation for the seamen or anyone else in most dhows.
The officers and the more important merchants live on a bench
round the wheel, in the stern of the ship; the seamen lie down
anywhere.

What keeps the seaman a disciplined and more or less contented MA
worker is his hope of reward, principally from smuggling 565
or his own ventures, and his ambition to get hold of a tiny shop 554
in the *suq* of his home town. This is an ambition he rarely 165
achieves. His more usual fate is to die young, especially if he be
also a pearl diver.

721 / 619 Parts of this coast are as dangerous for Europeans as for Arabs, and in some instances more so for Europeans. Even as late as December 1949 on the supposedly peaceful coast of the Aden Protectorate an act of violence occurred against a British-owned yacht. I talked to the survivors several months later in Mukalla. They related how the 110-foot motor launch *Anne Loretta* with an Englishman, his wife, and one Arab crewman was cruising a little off shore when she touched a sand bar. The captain went ashore to lay out a stern anchor and was seized by the Arabs of the local Ardiab tribe on the coast; then his wife and the Arab went ashore to see what had happened and were likewise seized. Several British officials to whom I talked admitted that these two English people came very close to death in the hands of these unpacified coastal inhabitants. The British explanation was that the area was between the Eastern and Western Aden Protectorates where the tribes had not been pacified, and the yacht should never have landed there.

IV

505 Every Arab dhow of ocean-going tonnage has a captain *(nakhoda)*, a mate, three quartermasters (or helmsmen), a boatswain, and perhaps a boatswain's mate in addition to the crew. The total complement on a 100-ton ship may be from twenty to twenty-five men, while on a 200-ton ship there will be from thirty-five to forty men. The small coasters of up to 50 tons have crews up to eight or ten; there are no officials on these [291] small craft outside of the *nakhoda*. There is no formal dress on a dhow; often it is difficult to tell the *nakhoda* from the crew, as everyone usually wears simply a loin cloth or the long Arab gown and a head cloth.

A *nakhoda* is much more than the word 'captain' implies; he acts as navigator, pilot, shipwright, sailmaker, ropemaker, agent for buying and selling cargo, agent for freight, agent for recruiting passengers, cashier, bookkeeper, judge, and arbitrator. So completely does the *nakhoda* handle the ship and the ship's affairs that the mate has little to do when the *nakhoda* is aboard. Only when the *nakhoda* leaves the ship does the mate take over; that is the mate's only excuse for existence.

505 / 396 Many of the Kuwait ships on the run to Africa carry carpenters aboard —not as ship's carpenters, but for the construction of small dhows for sale in African waters. Presumably they can sell them profitably in Africa at a price cheaper than the local boatbuilders! However, a small 10-ton dhow that was built aboard the Kuwait *bhum* on which Villiers sailed down the African coast, had to be left on the beach at Zanzibar in charge of a ship's agent, because the dhow could not be sold at the price de-

[285] The diver holds onto another line to which is tied an open-weave palm leaf basket for
228 the oysters; sometimes the diver has the oyster basket tied to his waist or around his neck and has the line tied to his body. When the diver is ready to come up, he gives several tugs on the rope. Thus the diver does not have to waste his valuable energy in swimming up or down. When he first reaches the bottom, he attempts to go out perpendicularly from the boat, frantically plucking all the oysters he can see before his air gives out. The diver usually crawls on one hand and one foot, using the other foot to propel himself and his free hand to collect the oysters.

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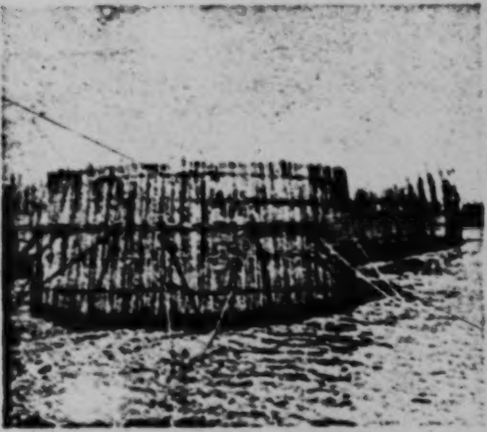
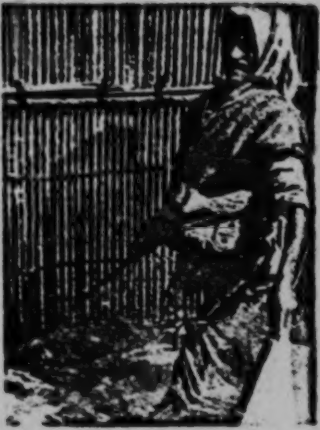
[292]





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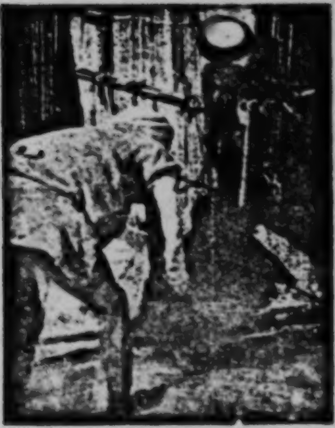

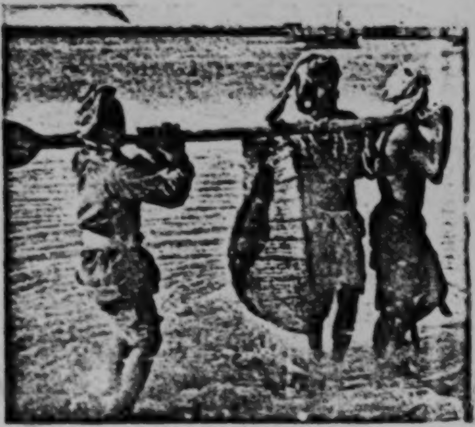

FIG. 8 (upper left)—The stockade, or primary enclosure, of a fishweir, encircled with rope and lashed down to prevent large fish from breaking out.

FIG. 9 (upper right)—Working around the edges of the enclosure with a fine-mesh hand net. Note the long burlap shirt, frequently worn by fishermen in colder weather.

FIG. 10 (lower left)—Transferring the fish from the hand net into a palm-leaf basket. Note the narrow entrance into the primary enclosure formed by the wings of the secondary enclosure; this entrance becomes narrower toward the bottom.

FIG. 11 (lower right)—Carrying the basket of fish ashore, slung from an oar. Fishweirs in the background.

228

825

Fig. [illegible]—Emir Nasir of Darin with a season's crop of pearls from his pearling jalbut.

Pearl oysters are found from low-tide level to 20 fathoms. There are pearl beds off the whole Arabian coast from Bahrein to Ras al Mish'ab, but the best banks are north and east of Bahrein Island, and the best beds between 5 and 10 fathoms. The beds are not charted; indeed, this would be useless, since they shift periodically. A bank may be sterile for several years and then suddenly produce the finest pearls of the season. The Arabs believe that the best pearls—the largest and whitest—come from deep water, though some of the more pessimistic say that the Persian Gulf never yields more than two first-class necklaces in any one season.

587 502 The pearling boats leave Bahrein, Kuweit, and the Trucial Coast of Oman for the main season en masse to drum beating and chants, but the few dhows from the Saudi Arabian ports slip out unceremoniously. The Bahrein fleet works up, the Kuweit fleet works down, and the small Saudi Arabian fleet works in the middle.

The *nakhoda* (captain) of a pearling dhow orients his craft at the edge of a bed so that when the anchor line is paid out, the dhow will drift across the bed. When the divers start to get only a few oysters, the dhow is allowed to drift a little. When it is completely across the bed, the crew moves it back to a fresh location with the sweeps, to the accompaniment of drum beating and chants. It is here that the nakhoda shows his real skill and knowledge, for he must keep his craft in virgin water.

222 292 Pearl diving in the Persian Gulf is essentially "skin diving." The diver wears only a loincloth and leather fingers to protect his fingers from sharp coral and shells; a horn noseclip and cotton or beeswax to stuff into his ears complete the "equipment." The use of drags, dredges, or compressed-air diving suits has been prohibited by the British, long the protectors of the Persian Gulf, and only the inhabitants of the Gulf—Arabs and Persians—can work the pearl fisheries.

Marity - Arabs MK2

CHAPTER IV

PEARL DIVERS OF THE EAST COAST

ALONG the East Coast of Arabia are located the 228
largest pearl fisheries in the world. Pearl fish- 433
ing has been the occupation of that part of 162
Arabia for many centuries. Probably a hundred thousand Arabs are engaged in this hard and dangerous work throughout the summer months. Half a million people must depend on these divers for their livelihood. This is not a large percentage of the inhabitants of Arabia, but the pearl divers are worthy of consideration, for the outside world has come into closer contact with them than with any other Arab community in the entire peninsula. As might be expected, the coast cities contain artisans, laborers, a few date gardeners, and merchants. These differ in no significant way from similar classes elsewhere. The pearl diving community is unique.

Nothing can exceed the barrenness of the coast where 311
these men live. From Kuwait in the north to Ras el 433
Kheima in the south, a distance of three hundred miles, 312
scarcely a green thing is to be seen, except for a few miles of date gardens at Katif and a smaller number at Dibai. The water available for drinking is brackish and almost undrinkable in many places. The inhabitants of Umm el Qaiwain, one of these towns, "drink mud," to quote the Arabs. The coast is so utterly unproductive that all food must be imported, and in some places even the fuel and drinking water.

hour, after which time the Kuwait diver is dragged out of the 228
water and huddles in some spot on the ship looking more dead 461
than alive. He may average four shifts a day, making a total of 40 dives; O'Shea states that under excellent conditions the Trucial divers average 50 dives a day.[26] During this time ~~he~~ has spent almost one hour under water. Ten dives are not difficult, nor are 50 excessive in one day for anyone experienced; but day after day and week after week the diving goes on—for four months. When the season is over, the diver has weathered the impossible; 228
he has probably completed over 3,000 dives in from 30 to 50 feet 461
of water, and has spent over 50 hours under the surface of the 147
Persian Gulf—that is, over a full forty-hour week without air, valiantly striving to gather all the oysters he can see through his blood-shot and irritated eyes, which become less sensitive with each dive.

Every ten days or so the divers do get a day of rest, and if the 228
shamal is blowing they have to wait it out, as it roils the water. 461
Occasionally they have to go ashore to bury a diver who fails 147
to complete his 3,000 dives. It is not surprising that there are 164
one or two empty stations on each boat; their occupants lie huddled corpse-like under their cloaks in some part of the ship, too sick from scurvy or plain fatigue to dive. After they have been at it for many weeks, the divers are apt to get convulsive shivers when they come out of the water for their rest, even though the temperature may be 110° F. and their tenders are covered with a lather of sweat. There are few, if any, white men who could [771]
endure just one day of such punishment; the Arab could not either except for his belief that Allah is merciful and that a Paradise awaits him.

Every dhow has to put in for water and food every three weeks 228
or so. In recent years the pearling fleet has used the oil company's 312
pier at Ras Tanura for water, but vessels have been known to replenish their water supply from some of the submarine springs which gush into the Persian Gulf. A diver goes down with an [415]
empty skin and opens it in the potable stream; he can bring up fairly fresh water by this means. One of thse submarine springs,

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case stories one hears about the amazing power of the Arabs to stay under water from 5 to 10 minutes or more are absurd.

[26] R. O'Shea, *op. cit.*, p. 137.

[502] One of th[e]se submarine springs,
228 located a few miles north of Jubail, has been marked by a spar
312 buoy by order of King Ibn Saud.

228 O'Shea states that while the divers on the Trucial Coast are rarely attacked by sharks, about 30 were attacked and two killed
165 around 1940.[27] Whitelock states that the Arabs claimed that the danger of sharks was ever present, but that their worst fear was from the saw fish, which had been known to cut divers completely in two.[28]

228 Rihani writes that what the Persian Gulf pearl diver dreads
325 most is the *dawl*. However, he apparently does not realize what
136 the *dawl* is, merely quoting Sheikh Khalifah ibn Muhammad al-Nabhani's *History of Bahrein:* "The *dawl* is a semi-fluid animal, about the size of a man's hand, round in shape, with a multitude of tendons about two feet in length, resembling a network of silk. It has no power of locomotion, but is driven by the waves and currents hither and thither. If it comes in contact with the body of man, it burns it, leaving a deep scar; and if it is lifted out of the water and left in the sun for five minutes, it dissolves."[29]

The zoologist will immediately recognize this description of the *dawl* as a jellyfish. It is in fact a small bell-shaped jellyfish with two to three foot-long tentacles. The *dawl* swims at any level and is practically invisible underwater; thus the divers cannot keep away from the stinging tentacles, which will burn the body and can put out an eye. Along the Ras Tanura peninsula, the *dawl* is most often seen near the surface shortly before flood tides.

136 There is a species of needle urchin (*Diadema*) in the Persian Gulf with spines from one or two feet long.[30] It is known that these spines will produce nasty slow-healing wounds if bumped into under water. This urchin may be the cause of some of the open sores on the divers' legs, although salt water alone could cause them, for the Persian Gulf has the highest salt content of all the ocean bodies, and constant immersion in salt water is known to produce a rash. However, as the *Diadema* is black and several

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[27] *Ibid.*, p. 138.

[28] H. H. Whitelock, *op. cit.*, p. 43.

[29] A. Rihani, *op. cit.*, p. 280.

[30] *Diadema* was first reported from the Persian Gulf by this author: A. H. Clark and R. LeB. Bowen, Jr., "Echinoderms of Saudi Arabia," *American Museums Novitates*, No. 1390 (1945).

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 312 502 438 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 442 439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they all end up in Bombay

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, Amer. Museum Novitates, No. 1390, 1949.

5: Harrison D-4 (1912-1924) 1924 M1 Middle East

Marity – Arabs MK2

CHAPTER IV

PEARL DIVERS OF THE EAST COAST

ALONG the East Coast of Arabia are located the 228
largest pearl fisheries in the world. Pearl fish- 433
ing has been the occupation of that part of 162
Arabia for many centuries. Probably a hundred thousand Arabs are engaged in this hard and dangerous work throughout the summer months. Half a million people must depend on these divers for their livelihood. This is not a large percentage of the inhabitants of Arabia, but the pearl divers are worthy of consideration, for the outside world has come into closer contact with them than with any other Arab community in the entire peninsula. As might be expected, the coast cities contain artisans, laborers, a few date gardeners, and merchants. These differ in no significant way from similar classes elsewhere. The pearl diving community is unique.

Nothing can exceed the barrenness of the coast where 311
these men live. From Kuwait in the north to Ras el 433
Kheima in the south, a distance of three hundred miles, 312
scarcely a green thing is to be seen, except for a few miles of date gardens at Katif and a smaller number at Dibai. The water available for drinking is brackish and almost undrinkable in many places. The inhabitants of Umm el Qaiwain, one of these towns, "drink mud," to quote the Arabs. The coast is so utterly unproductive that all food must be imported, and in some places even the fuel and drinking water.

344 houses, one for each ḥamūlah. In addition to the
621 public maḍāfah which exists in the community,
517 distinguished and affluent personages often keep
562 up private guest-houses because hospitality is
considered an important duty among the fellahin
and Bedouin alike.

347 A coffee-house may be found in village situated close to a town or in large rural settlements.

●312 The women -- who generally do not partic-
517 ipate in the conversations of the men in the
562 maḍāfah -- meet and chat at the well of the vil-
621 lage. There are, of course, many rural places
in Palestine which have no fresh water spring and where the local residents as well as their flocks drink the rain water accumulated in cisterns built adjacent to, or under every house. But where there is a well, the women have a chance to spend some time together and chat when they make their daily trips to the well to draw water and bring it home. At the well they are often joined by youths and even men.

554 The villagers who lived in the town for some
621 time may become influential back home, because
they are familiar with the social conventions of the big world, have come in touch with effendis and rich personages. They are regarded as successful, particularly if they increased their material wealth while away from the village. Among them may be former policemen who returned to the village after the completion of their term of service. As these had been associated with the inside of the State machinery and know how to "take care" of affairs, the villagers approach them for advice and guidance in legit-

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505 Once the trading voyage down the African coast to Zanzibar is completed, Arab and Persian craft usually load a cargo of mangrove poles for shipment back to Arabia, unless they have the rare luck of getting cargo on northern consignment. [342-314] For centuries mangrove poles from Africa have been used in the construction of houses in Arabia, where there is an extreme shortage of wood of any kind. Indian dhows never load mangrove poles since there is an abundance of wood in India. Mangrove trees are plentiful along the East African coast in swamps at certain river mouths; most poles come from the Rufiji Delta, a little south of Zanzibar, and from Lamu, north of Zanzibar. The poles are cut by the dhow crews, with the aid of Swahili cutters recruited for the purpose.

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In making the trip home on the southwest monsoon the Arabs waste little time, for the sooner they can get back, the more time they have for other activities before it is time to ship out again. Dhows from Oman

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[22] A. Villiers, SS, pp. 237-261.

464 maritime ***nakhodas*** are having difficulty in getting crews. Many of their sailors, who also operated under the debt system, are now working for oil interests.

464 315 On Bahrein oil began to be developed as early as 1932, just when the pearl industry started its real slide. Oil come late for Saudi Arabia, and it was not until 1945 that the industry absorbed large numbers of native laborers. By then the town populations were so well adjusted that most of the labor came from the desert Bedouins. These jobs with the oil companies at first absorbed the unemployed, but as the oil projects developed they have absorbed more than the unemployed, until now the ***nakhodas*** of Bahrein, Kuwait, and Saudi Arabia are having an increasingly hard time finding divers; the divers are working for the oil companies and paying off their debts.

The Trucial Coast has yet to have the oil boom wash its shores. Today many men still make the northern trek from the Batinah coast, and the ***nakhodas*** there have little difficulty in finding pearling crews. But the happiest Arabs in the Gulf are the 556 sheikhs in the oil areas, for even though their revenue from pearls is at an all-time low, they now get their cut from oil, a much more lucrative and reliable commodity.

384
MARINE INDUSTRIES OF EASTERN ARABIA

RICHARD LeBARON BOWEN, JR.

361 THE Persian Gulf coast of Saudi Arabia is desolate in the extreme: in
226 many places one travels along the beach for dozens of miles without
503 seeing a living soul. But there is a sprinkling of old coastal towns, whose inhabitants for the most part gain their livelihood from the sea.
315 Among them are Jubail, long a port of entry for the capital city of Riyadh, 235 miles inland; Dammam, seaport for the Qatif and Safwa oases (a deep-water pier has recently been constructed at Dammam); Al Khobar and Oqair, ports for the great oasis of Hofuf (Hasa). To these have been added of late years Arabian American Oil Company settlements at Ras al Mish'ab (a construction camp and port facilities), Nejma (a refinery and camp), and Ras Tanura (pipeline terminus and cargo wharf).

FISHING

226 Foremost among the marine activities of the older coastal towns is fishing.
262 Although there are far fewer species of fish in the Persian Gulf than in the Indian Ocean, they are present in greater numbers, particularly the porgies, than one might expect in so warm a body of salt water, and fish form a welcome addition to the diet in a land where food is pitifully scarce.

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[857 fishweirs. On land the hand line is used mainly by small boys, who, like
504] the small fry of any other country, enjoy fishing. Since there is an almost complete lack of jetties and piers, these young fishermen have to stand on the beach and heave their weighted lines as far as they can (Fig. 2). When the fish are running, these youngsters line the shores, and their catch is sometimes sizable. Hand lines are indispensable on every dhow and are thrown out as soon as the boat is in open water.

A more advanced type of fishing uses the throw net—a circular net about 16 feet in diameter made of quarter-inch-mesh netting. The periphery is weighted with small lead weights, then doubled back toward the center and tied at 12-inch intervals to form a continuous pocket some six inches deep. The fisherman walks in knee-deep water at low tide, holding his net—which he has folded and gathered with the perfection of a parachutist—

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226 wave action, completely leveled almost all the 10 fishweirs on the Tarut Bay side of the Ras Tanura peninsula. All during the fishing season constant maintenance is necessary (Fig. 13).

Because of its shoal water, Tarut Bay is the only place along the Persian
226 Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay, is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly.

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
suits against the Arabian American Oil Company, asserting that the change
691 in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
424 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir
[435] rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras Tanura area the sale was an economic blow, for much of the fish supplied to Hasa Province came from the Ras Tanura traps.

ROCK MINING

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[2] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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501 [2] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen, Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87-132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shewes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

usually try to sell their mangrove poles along the South Arabian coast. 439 If they do not sell their poles by the time they get to Oman, they simply put them on the beach and wait until next season. Knowing that the Omanis flood South Arabian ports with poles, the Bahreinis, Kuwaitis, and Persians sail straight for the Persian Gulf and its more profitable markets. Likewise, the Omanis, realizing that the Persian Gulf markets are flooded in the early summer, wait until late summer if they have to sell their poles in the Persian Gulf. Sometimes dhows from Oman carry firewood or fish oil in addition to mangrove poles if they go north to Basra for dates.

If a vessel sells its cargo of mangrove poles a considerable distance from her home port, it may load coral rock as ballast if it is available; this may be sold in Kuwait and ports in eastern Arabia. The coral rock is pried off the sea bottom and is a common commodity for construction [316] purposes in a land where building rock is almost as scarce as wood on the sterile sandy coast.

As we have seen above, Persian and Arab ships make two trips to India during a season, usually carrying dates on consignment, but sometimes they carry dried fish, dried fruit, palm leaf mats, and coffee from the Persian Gulf and Arabia. After they have unloaded, they pick up a cargo of the products of India for sale in their native waters. These products consist mainly of teakwood timber, teak dugout canoes, coir roping stuff, coir matting, bamboo, cotton-goods, cocoanuts, chests, chairs, spices, and tea. Cement and tiles are occasionally loaded, but bricks (a very common product of the Malabar coast) are rarely loaded, as they are manufactured in Iraq and shipped out of Basra. Virtually all the teakwood for dhow construction comes from India, and Indian teak dugout canoes have been spread up and down the shores of the Indian Ocean, the Persian Gulf, and the Red Sea by dhows.

The *Periplus of the Erythraean Sea* tells of ships coasting on the African coast and trading cargoes as they went two thousand years ago. But cargoes have changed considerably from those ancient times when alabaster, myrrh, and frankincense were exported from South Arabia and tortoise shell, hippopotamus teeth, cinnamon, and slaves were exported from East Africa.

By 1800, slaves had become the chief cargo out of East Africa, with 567 Zanzibar as the center; however, with European intrusion into the waters of the Indian Ocean, eventually the British more or less successfully stopped the slave trade, which was in large part carried on by the Omanis. It has been estimated that by 1873 there were thirty thousand slaves ex-

228 his great toe completely severed by a large piece of faroush that had slipped and hit his foot as he stood on the sea bottom.

Hasa, known to Americans familiar with native construction in Arabia as "sea rock," is found on the sea bottom in more or less solid deposits, from which a diver pries pieces (Fig. 15). Faroush is much more difficult to mine: it takes at least a day to get a boatload, whereas a crew may get three or four boatloads of hasa a day. Faroush is sold by the square measure, hasa by the cubic measure.

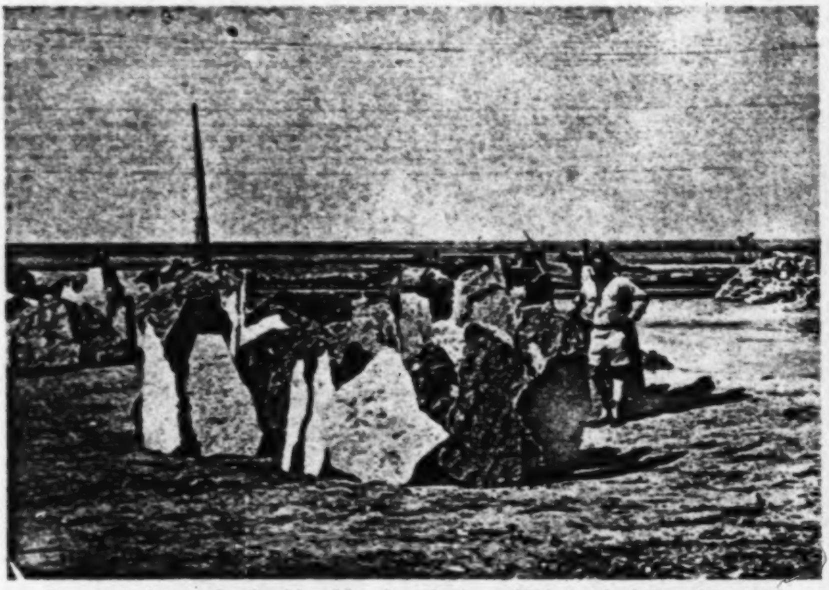

FIG. 14—Author standing by slabs of *faroush* on the shore of Bahrein Island. Faroush is mined near Bahrein in much larger pieces than in Arabian waters. Pile of *hasa* in right background.

228 The rock divers, like the pearl divers, work only in the warmer months.
464 Since they generally work in water that is shallower than the pearl waters
and therefore remains warm longer, the mining season is two or three months
461 longer than the pearling season, which is only four months. The rock divers
do not work constantly, hour after hour, day in and day out, as the pearl
339 divers do, since each boatload has to be sailed to shore. A small stock pile
317 of faroush and hasa is always maintained in every seaboard town, and most
of its buildings are constructed from these two rocks. Lime is made by burning hasa.

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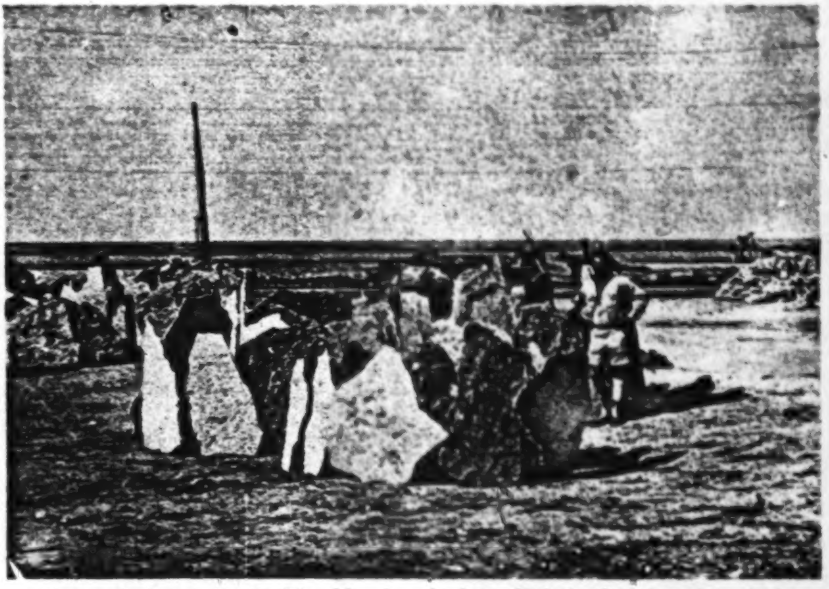

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Kuwait MI1

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Negro origin, the descendants of slaves, though not now slaves MA
themselves. Many others are of Iranian origin. Almost none are 505
Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, 565
the callings open to the low-class Iranian are restricted to portering,
pearling (either as diver or as tender), and sailing. Both
Iranians and Negroes work splendidly, are loyal, competent, and
well disciplined.

As the *nakhoda* class is tied to the merchant by a structure of MA
debt, so also are the sailors tied to the *nakhoda* class in the same 565
way. All deep-sea sailing is paid for on a shares system, and there 426
are no wages. Often the *nakhoda* of the deep-sea dhow has an interest 465
in a pearling vessel (though not now to anything like the 328
same extent as in former years), and the sailor may be bound to 428
him through pearling debts, either his own or inherited. The
more iniquitous practices in the pearling business structure have
long been on the way out, largely because of the excellent example
set at Bahrein, but the debt tradition stands and is almost impossible
to eradicate.

MA
The sailors go to sea because they know no other life, and they 505
make a wretched living by incredibly difficult methods. They 511
have no possessions other than the clothes they stand in, and 342
one or two spare gowns, a good headcloth, and a few sarongs. 291
Their toothbrush is the twig of a tree; their ablutions are made 515
five times daily at a mosque well, or in the sea; they know no 501
shelter and rarely have a bed. The younger seamen, I have noticed, 565
often have no home other than the *suq*, or native bazaar,
where they coil down in their rough cloaks for a night's sleep on a
bench in a cheap coffee shop, or in the sand. At sea, they stretch
out on the deck, beneath the stars, for there is no such thing as
accommodation for the seamen or anyone else in most dhows.
The officers and the more important merchants live on a bench
round the wheel, in the stern of the ship; the seamen lie down
anywhere.

What keeps the seaman a disciplined and more or less contented MA
worker is his hope of reward, principally from smuggling 565
or his own ventures, and his ambition to get hold of a tiny shop 554
in the *suq* of his home town. This is an ambition he rarely 165
achieves. His more usual fate is to die young, especially if he be
also a pearl diver.

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A PEARL DIVER AND HIS HOUSE

facing page 84

384

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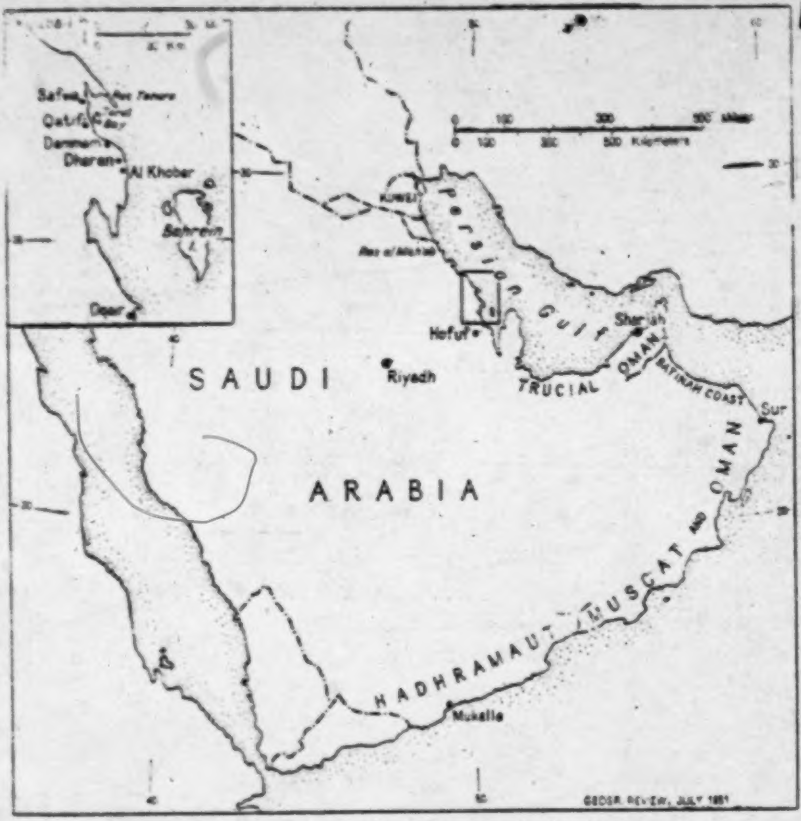
Safwa
Ras Tanura
Tarut Bay
Qatif
Dammam
Dharan
Al Khobar
Bahrein I.
Oqair
0 100 200 300 Miles
0 100 200 300 400 500 Kilometers
KUWAIT
Persian Gulf
Ras al Mishab
Hofuf
Riyadh
Sharjah
OMAN
TRUCIAL
BATINAH COAST
Sur
SAUDI
ARABIA
OMAN
MUSCAT AND
HADHRAMAUT
Mukalla
GEOGR. REVIEW, JULY 1951

FIG. 1—Location map. Inset shows places mentioned in the text.

with both hands and his teeth. Whe [illegible] spots a school of fish, he flings the net into the air with one arm (much like a man sowing seed) and a snap of his head. The net opens out flat and drops on the water; the weights carry the outside to the bottom faster than the center. The fisherman then picks up the net by the center, and any fish under it immediately swim toward the edge and are trapped in the pocket. He keeps pulling the center through one hand and folding it up, and when he has finally gathered in the whole net, he carefully removes the fish flopping around in the pocket, puts them in a palm-leaf basket, and starts all over again. 226

The Arabs also use wire and palm-leaf basket fishtraps (Fig. 4). These 261
are oval-shaped, from two to five feet long, with a cone-shaped entrance 262
on each end through which the fish cannot squeeze out. The traps are usually baited with cuttlefish, forbidden to the Arabs by a strict interpretation of

however, if it sighted land, it headed straight for it, showing the sailors 487
the direction of the nearest land. Certainly this would seem to indicate voyages of more daring than mere coasting voyages. There are numerous Sanskrit and Pali references to Indian trading voyages dating from about the third century B.C., and there is one Sanskrit manuscript containing a treatise on shipbuilding in ancient India, giving the sizes (ranging up to 260 feet in length) of dozens of types of ships.[3]

Zanzibar is the unofficial southern port for the lateen fleet sailing down 103
from the north, although the Indians sometimes go on to Madagascar. 487
Soon after the northeast monsoon has set in, lateen craft start to come into Zanzibar. Arabs come from the Persian Gulf ports of Basra, Kuwait, Bahrein, and Sharjah on the Trucial Coast of Oman; Persians send ships from the Persian Gulf ports of Bushire, Lingeh, Qishm, and Bandar Abbas. Arabs of the Oman ports of Sur and Muscat on the Gulf of Oman and Indians from the Gulf of Cutch and the Malabar coast all send dhows down to Africa. Arab craft also sail down from Aden and Mukalla in the Hadhramaut, while the Red Sea contributes its craft from Port Sudan, Massawa, and Hodeida. Even the Somali coast contributes to the fleet arriving at Zanzibar, with dhows coming down from Djibouti, Berbera, and Mogadiscio.

Kuwait is the largest maritime and dhow-building port in the Persian 361
Gulf, with Bahrein a very poor second. While Bahrein cannot begin to 501
compare with Kuwait from a maritime standpoint, it probably ranks ahead of the latter as an emporium in the Persian Gulf. It serves for all the entrepôt trade to the eastern coast of Saudi Arabia, the goods coming into Bahrein in large dhows and being transshipped from Bahrein to Arabia in shallow-draft *jalbhuts* (see Plate 17—top). In 1939 Kuwait had 106 ocean-going *bhums* on the registry.[4] However, the majority of the Kuwait deepwater *bhums* sail to India, rather than to Africa, carrying dates from Basra. The mariners of Kuwait probably reached their present maritime status a little over a century ago. Palgrave traveled in the Persian Gulf in 1862-1863 and was much impressed with the maritime activity of Kuwait:

> Among all the seamen who ply the Persian Gulf, the mariners of [Kuwait] hold the first rank in daring, in skill, and in solid trustworthiness of character. Fifty years since their harbour with its little town . . . was a mere nothing; now it is the most active and the most important port of the northerly Gulf.[5]

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[3] R. Mookerji, *Indian Shipping* (Bombay: Longmans, Green and Co., 1912), p. 19. 113

[4] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 399.

[5] W. G. Palgrave, *A Year's Journey Through Central and Eastern Arabia (1862-63)* (3rd ed., London: Macmillan and Co., 1866), II, 386.

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However, a century before this, Kuwait was apparently noted more for its pearl fisheries (which are still important) than for its maritime trade, as Niebuhr related that in 1763

> Kuwait is a sea-port town. . . . The inhabitants live by the fishery of pearls and of fishes. They are said to employ in this species of naval industry more than 800 boats. In the favorable season of the year, this town is left almost desolate, everybody going out either to the fishing, or upon some trading adventure.[6]

In Niebuhr's time, in the eighteenth century, the Omani sailors from Muscat and Sur on the Gulf of Oman were the famed Arab mariners, for Niebuhr related that

> The inhabitants of Oman, although not fond of sea-fights, are nevertheless the best mariners in all Arabia. They have several good harbours, and employ many small vessels in the navigation between Jidda and Basra. To this last town there come annually fifty such vessels.[7]

In the middle of the last century Muscat was still an important maritime port, for in 1854 Osgood related that

> [439] Several ports in the Persian Gulf are tributary to it, and some excellent ships and a large number of [*baghlas*] employed in coasting and foreign trade, are owned by the Banian merchants at Muscat. In fact more than half of the trade of the Persian Gulf is carried on in ships owned at Muscat. . . . The trade with America, which is carried on chiefly by vessels from Salem does not exceed thirty-five or forty thousand dollars annually. Dates and cash are usually taken in exchange for American merchandize.[8]

In the present day Muscat has completely fallen from its former prized position and given way to Kuwait and Bahrein Island in the Persian Gulf. However, the port of Sur in Oman still carries on the maritime tradition of the Omanis and maintains a considerable fleet of dhows which have long been prominent in the trading along the African coast.

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The craft that make the trip down the African coast from Arabia are by no means all large ocean-going vessels; craft of all sizes and descriptions come into Zanzibar. Villiers[9] tells of seeing a 30-foot *jalbhut* from Oman sailing down the African coast. Having owned and sailed a *jalbhut* of about the same size in the relatively calm Persian Gulf waters, I have nothing but the utmost respect for anyone with the nerve to sail such a small open boat several thousand miles in the potentially rougher Indian Ocean.

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[6] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 127.
[7] Ibid., 122.
[8] Osgood, *Notes of Travel* (Salem, 1854), p. 81.
[9] A. Villiers, *SS*, p. 190.

waters from May to September, and why most local Indian craft are 505
drawn up on the beaches. 132

II

Dates are probably as important a factor as the monsoons in maintaining 439
the large lateen fleet in the waters of the Indian Ocean. By a lucky coincidence, 505
the great date crop of Iraq begins to ripen just before the northeast monsoon sets in about October. The great maritime expansion of the port of Kuwait has probably been due in no small part to its proximity to Basra, the port through which most of Iraq's dates go.

Dhows come to Basra for dates from Kuwait, Bahrein, Persia, Oman, India, and even as far away as the Hadhramaut. Starting in the latter part of August and continuing into September, Kuwait deepwater ships are floated from the beaches, where they have rested for several months during the summer, making ready for the run to Basra to pick up dates. The farther the home port is from Basra, the earlier the ships must depart, so that craft from the Hadhramaut must allow a month or more to get to Basra, riding up to the Gulf of Oman on the summer monsoon and then working their way up the Persian Gulf, where the monsoon is not felt.

Almost without exception the date cargo is carried out of Basra on consignment for some merchant; sometimes the destination is known on leaving Basra, but often the consignment is sent to Aden or Mukalla (see Plate 23—bottom) in South Arabia for final shipping instructions from the Arab or Indian export firm shipping the dates. Dates are usually not carried into the Red Sea much past Hodeida in the Yemen in Kuwait ships, although Villiers[14] tells of a Kuwait *bhum* transporting a load of dates as far as Qizan in Saudi Arabia.

In such a manner dates have been leaving Iraq for decades bound for the southern shores—that is until the winter of 1949. In that winter, for the first time in many years, the great date-bearing Kuwait *bhum* fleet failed to appear in its usual strength in the waters along the southern shores of Arabia; only a portion of the usual quota appeared in Aden by the first of 1950. The dates that would ordinarily have come into Aden in Kuwait dhows came down unceremoniously under steam. What caused this abrupt change in the well-established status quo of the dhow trade? The same thing that has wrought so many other radical changes in the economy of the Middle East lately—oil!

Kuwait is actually a city-state with few industries except pearling, fishing, 361
and shipbuilding; there are no farms, no date plantations, and only 465

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[14] A. Villiers, *SS*, p. 366.

361 a few scattered Bedouin tribes. The Kuwait Oil Company is now operat-
465 ing in high gear, and has apparently offered so many opportunities for natives that *nakhodas* (captains) have difficulty in getting men to sail their ships at the wages they can offer. Sailors never get any regular wages on a dhow, receiving a share of the earnings of the ship only after the voyage is over. Many sailors have apparently found that it is a comfortable feeling to receive a regular wage every week! It is too early yet to tell whether or not the change is permanent.

439 There has also been a noticeable fall-off in date-bearing Arab dhows
505 sailing to India, but apparently for a different reason. Vaidya[14] states that during the 1943-1944 season, presumably for the first time, sixty to seventy per cent of the Arab fleet that usually brought dates failed to appear because of Arab restrictions on the export of wet dates and because of the high prevailing prices of the dates. Thus, this case is not allied to the present situation prevailing in Kuwait, as during the 1943-1944 season dates presumably were not shipped to India by any other means.

However, even if Kuwait is unable to put its *bhums* to sea, the date crop in the future will still probably be carried out of the Persian Gulf in dhows as usual; it will take time to attain a balance again. Whether the port of Sur rises to the challenge or whether some Persian port takes the trade remains to be seen. The Suris from Oman are logical successors to Kuwait, for in times past they have been noted for taking cargoes at lower rates than the Kuwaiti or any other mariners could afford to, and they have a long maritime history.

It is interesting to note that oil activities in other areas in the Persian Gulf have drastically affected the marine activities of other coastal towns. Over ten years ago, the Saudi Arabian ports of Jubail, Qatif, and Darin used to send out over a hundred dhows yearly to join the Persian Gulf pearl fisheries. Now if they send out several dozen dhows it is news; the Arabs who used to dive for pearls now have steady jobs with the Arabian American Oil Company. The same has happened on Bahrein Island. The Bahrein *nakhodas* are no longer able to find a multitude of divers who will accept the wage the *nakhodas* are able to offer; thus the Bahrein pearl fleet is only a shadow of what it was a quarter of a century ago.

439 Most but not all Arab dhows load dates first; however, many Omani
226 dhows bring cargoes of dried fish and fish oil, for fishing is particularly good in the waters off Oman, and sharks and large tuna are caught in considerable amounts, both for home consumption and export. Sometimes, however, the Omanis may set out for Africa empty, or with only a partial

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[14] K. B. Vaidya, op. cit., p. 207.

Maritime Arabs M1.2
Kuwait = MI+

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438 All the cities along this coast north of Ras el Kheima
361 are diving communities, and some of them are quite large.
K Kuwait, the largest, has about fifty thousand inhabitants.
161 Kuwait has good harbor facilities, and the government of
228 the city has been notably efficient and strong-handed for
439 many years. A pearl diver may as well live in one coast
312 town as another, and so Kuwait has grown to be a large
262 city. The drinking water for this entire city is brought in specially constructed sailing vessels from the mouth of the Arab River in Mesopotamia sixty miles away. The divers live on rice that is brought them from India, on wheat that comes from Persia, and on sheep from inland Persia and Arabia. The only local product is fish. The physical surroundings of all these towns are very similar to those of Kuwait. The landscape is an unbroken and monotonous expanse of sand on one side
[K and sea on the other. The heat in summer is ex-
132] treme and the air is practically always moist, so that for three or four months in the summer the climate is almost unbearable.

M In the spring the diving community begins to hum
228 with activity. The boats are cleaned up and repaired.
463 New masts are put in and new rigging provided. As the time for diving approaches, supplies of food and water are taken on board. The divers collect from far and near. Most of the population are divers, and in addition many more come from a distance to dive for the season. There are men from every district in Arabia and from all over Mesopotamia; a few come even from the various provinces of Persia. The place is filled with festivities and good fellowship and hopes for a successful season.

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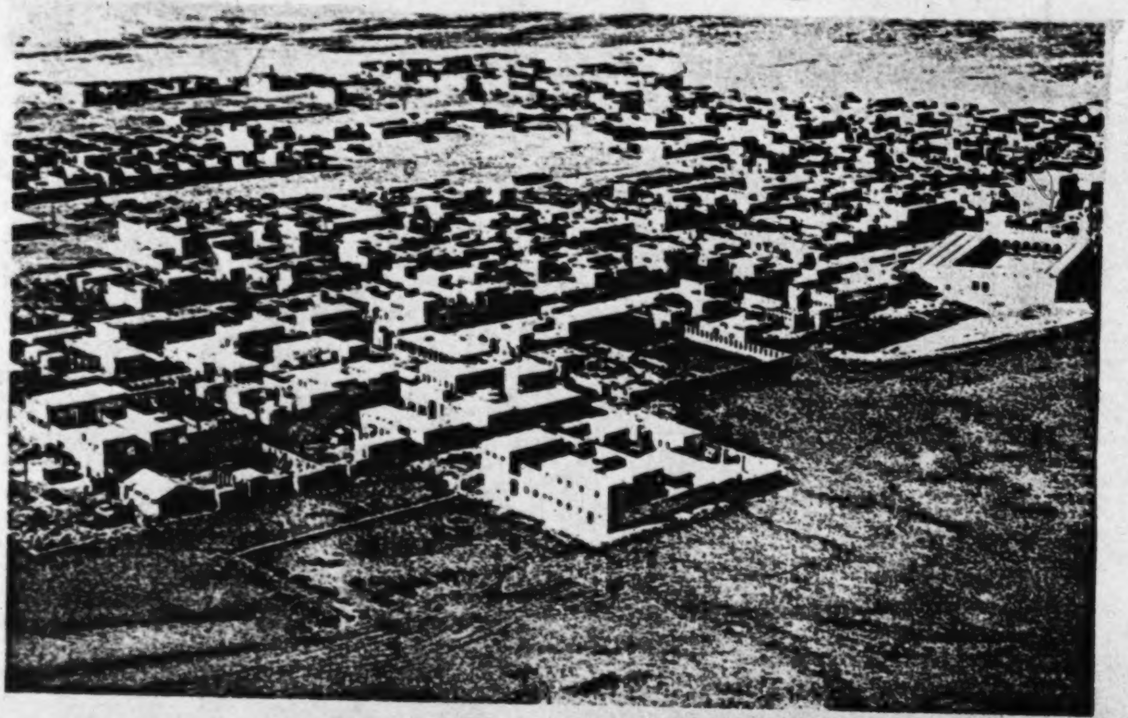
228 The day for embarkation finally comes. The boats
501 are fitted with enormous sails, and also with a full com-

4:Lebkicher et al U-3 (no date) 1952 MJl Saudi Arabia MJl
Maritime Arabs MK2

361

VIEWS FROM THE PERSIAN GULF AREA

p.28(c)



Aerial view of Al Khobar, seaport on the Persian Gulf
and former marine terminal for Dhahran.

396

396 **SHIPBUILDING** -- construction and repair of boats, ships, and underwater craft; manufacture of shipbuilding materials and equipment (e. g., marine motors, nautical gear); industrial specialization (e. g., shipyards); organization of labor and production; etc. See also:

Manufacture of cordage	283	Description of water craft	501
Woodworking	322	Water transport	505
Carpentry	335	Naval vessels	716

SOME ASPECTS OF THE ARAB DHOW TRADE

Alan Villiers

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AT THE end of 1939, there were 106 large ocean-going dhows on the registry of the Persian Gulf port of Kuwait. They averaged about 100 tons, the largest being 300 and the smallest about 75 tons, by European standards. Their average value, at that time, was perhaps 10,000 rupees, the approximate equivalent of $3,000. They made trading voyages with Iraqi dates, loaded in the Basra river, to the coasts of India and East Africa, generally making either two Indian, or one East African, voyage annually. The majority were in the trade to India, with an occasional diversion to East Africa. From India they were accustomed to bring back shipbuilding materials, coir for cordage, and Malabar teak; from East Africa they brought mangrove poles from either the delta of the Rufiji River, in Tanganyika, or from the port of Lamu, in Kenya Colony. These poles were used for building, and the dimensions of the rooms in most of the Kuwait houses depended upon the length of the mangrove poles brought from East Africa.

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In addition to these deep-sea dhows, there were also, at that time, between 100 and 150 pearlers, and some 50 or 60 smaller dhows in the local trade to the Basra river, many of them engaged in bringing fresh water (for Kuwait has no satisfactory supply of its own). New vessels were building at the rate of two or three a month, for deep-sea, and a similar number for coastwise trade.

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The port of Kuwait was then, and is still, the principal dhow-

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▼ ALAN VILLIERS, deep-sea sailor and author, spent over twelve months in 1938–39 studying firsthand the Arab dhow trade of the Persian Gulf and the coasts of southern Arabia and East Africa. His experiences are described in his *Sons of Sinbad*, published in 1940; Mr. Villiers here presents further information on the social and economic aspects of the trade.

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2

Kuwait MI 1

K MA 396 439

building and trading port of the Persian Gulf, though offering little trade itself. Its only real rival in the deep-sea trade was the ancient port of Sur, near Ras al-Hadd, on the Gulf of Oman. Figures for the port of Sur were unobtainable, but there must have been at least 100 deep-sea dhows sailing from there, the majority to Mogadishu, Mombasa, and Zanzibar. Several ports on the Trucial Coast of Oman also sent their quota of deep-sea ships to Africa and India; and Muscat and Mutrah Bay, and the ports of Lingeh and Qishm, in Iran, contributed a few. But the flag of Iran was a rarity in both Indian and African ports, compared with the Arab.

K MA 396 439 464

In addition to the Persian Gulf and Omani ports, Mukalla in the Hadhramaut, Ma'alla by Aden, Hodeida, Mocha, and Luhaiya in the Yemen, and Qizan on the coast of Asir in the Red Sea, all build and maintain considerable fleets of dhows. These I have seen, personally; there are many ports I was unable to visit. It is probable that the dhow trade round the Arab coasts employs upwards of 2,000 vessels of one sort or another, in which at least thirty or forty thousand men gain some sort of livelihood.

K M.A. 439 505

For many years, steamers of the British India Company have been trading in the Persian Gulf. Kuwait is still well served by steamers from Karachi, and an occasional long-voyage vessel used to put in from New York and London, even before the oil resources began to be exploited in 1940. American, German, Italian, and British lines, none of them likely to overlook any cargoes, all traded to the Gulf. The African East Coast and the Indian coasts are even better served. How is it, then, that a dhow trade of such importance still survives? How is it organized, and how managed?

K MA 488 439 505

One reason — perhaps the chief — why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and

of Dar es Salaam, loaded her with mangrove poles, and brought 505
her back to Zanzibar again, where the *nakhoda* had ostensibly 565
been trying to assemble passengers and extra cargo for the return 459
to Arabia but in fact had been enjoying a new harem.

Mates are paid by shares, and are, in my opinion, an oppressed 505
class. They carry their own ventures, engage in smuggling on a 565
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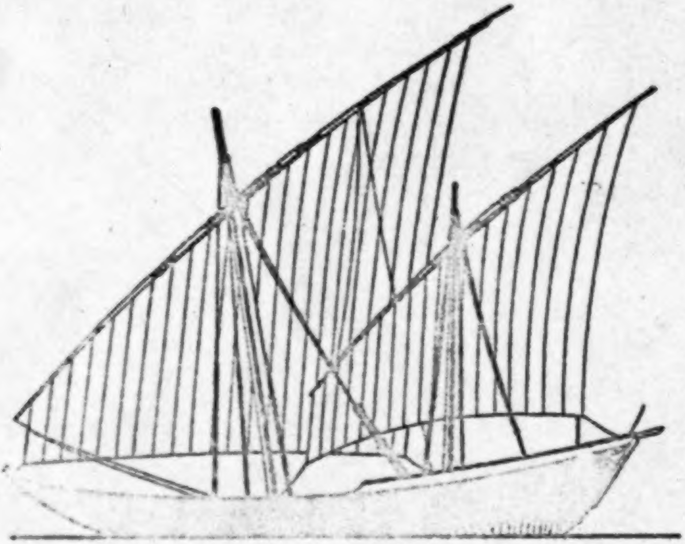

[501]

Baggala

small scale — haberdashery, currency, and so forth — and generally keep the ship's books. They may become *nakhodas* of small *booms*, running to the Basra river; but it is unusual for a man from the more dignified deep-sea trades to descend to this. There is no social status about the *nakhoda* of a coastwise water dhow.

Ships are built by shipwrights who employ no naval architects. 396 ●
Both builders and riggers' lofts are unknown. The ships are put 501
together entirely by eye and take the traditional form either of [171]
the double-ended *boom*, or the carved and embellished *baggala*,
which obviously has a considerable ancestry from the Portuguese
galleon ..

MA 396 501 galleon. *Baggalas*, being both costly to build and unwieldy in a seaway, are now unfashionable. A *boom* is both cheaper and much easier to build, and carries just as much. Her sharp stern makes her safer in a seaway, though it is no part of her builder's plan that her *nakhodas* will try her qualities in a storm. Their sailing, he hopes, will be confined to sunny seas and more or less favorable winds; therefore the clumsy lateen rig will do.

K MA 501 505 The lateen is awkward but cheap; it demands a big crew, but these are cheap, too, for they are the sailmakers and riggers as well as mariners, and their only cost is an agreed share in the ship's earnings. The lateen is a grand pulling sail, and the dhows sail handsomely in their own conditions. There is nothing clumsy about them, though their fish-oiled hulls smell abominably and their underwater bodies are preserved by a mixture of tallow and K MA [566] lime, rubbed on by hand and renewed quarterly. The sailors do this work, as well as handle all the cargoes, keep the passengers in order and extol the merits of their ship so that more passengers might sail with her, tow the ship with her own longboat and propel the smaller dhows by sweeps, in calms, and fight for her if need be. The Kuwait dhows today are never armed, though the Suri may be.

III

K MA 505 501 439 A brief description of my personal experiences will serve to illustrate a typical East African voyage.[1] I sailed in a Kuwait dhow of the *boom* type, a vessel of 2,000 date-packages capacity — perhaps 150 tons — which had a crew of twenty-eight. She carried something between 120 and 180 passengers, although her hold was full of salt and rice, and her decks were already crowded with a large longboat, a small gig, and a dhow under construction for sale at Lamu.

K MA 439 505 I joined the vessel at Ma'alla, the native port of Aden. She had already been several months at sea, peddling a full cargo of dates from Fao (by the mouth of the Basra river) around the coast of the Hadhramaut, and to Berbera. When I joined her, she had been hauled out on the beach at Ma'alla and her bottom

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K MA 113 [1] The voyage here summarized is described in detail in the author's *Sons of Sinbad* (New York, 1940).

Kuwait MI1

repayed, and already was loaded with her cargo of salt and rice in sacks, and some mysterious parcels on deck for the Sultan of Mukalla. All her crew had their sea chests filled with trade goods from the cheap *suq* in the Crater at Aden; her carpenter was at work on a 40-foot dhow for sale on the voyage; and she had shipped several Suri and Omani merchants, from Aden, bound on a general trading voyage on their own account, wherever the dhow might take them.

K MA 505 437 [396]

We sailed first to Mukalla and Shihr, where we embarked passengers (the fare was eight rupees regardless of destination, the passengers providing their own food and looking after themselves entirely) and some further cargo. This consisted mainly of a parcel of condemned dates which it was hoped to sell to the Somali (or failing that, to feed to the Swahili labor in the Rufiji Delta, when loading mangrove poles), some dried shark which smelled high even aboard the dhow, some cooking stones, and a considerable quantity of basketware.

K MA 484 439 505

With this lot aboard, and the *nakhoda* pessimistic and depressed at the small number of passengers, though his dhow appeared crowded, we sailed first to Haifun, a salt port on the northeastern coast of Italian Somaliland. There we anchored among a fleet of dhows, and did nothing at all for some time. Finally, some rice was sold, some haberdashery smuggled into boats which the local Somali brought alongside, and lot of fish caught and dried. Then we went on to Mogadishu, running down the coast with the northeast monsoon. At Haifun another Kuwait ship was caught smuggling and heavily fined; and all the Kuwaiti in the harbour contributed to pay the fine. At Mogadishu, it was hoped to land a hundred or so passengers, but the Italians would not permit them to disembark. Trade there was extremely difficult, and little could be done. Some of the merchants left, as far as I could gather, to try to collect debts owing to them from previous voyages. Some smuggling went on (I saw a lovely carpet change hands), some of our passengers melted away and their places were taken by others, equally undocumented.

After a week or ten days we passed on down the coast to Lamu. Here more passengers landed and there was a determined attempt to sell the new dhow which the carpenter had completed. She

K MA 501 439 435

K was a lovely little vessel which could carry some fifteen tons. The
MA price asked was 1,000 East African shillings, or about $240. At that price,
501 there was no buyer; she finally changed hands at 700 shillings. Lamu was
439 a mangrove-pole port, but I gathered the trade was rather too well re-
435 gulated for our nakhoda's taste, and we bought nothing.

K Next came Mombasa, a port with a large dhow trade. Some figures I
MA saw in the Report of the General Manager on the Administration of the
439 Railways and Harbours (Kenya and Uganda) showed that the dhow trade
505 was increasing, rather than diminishing. The latest returns I say, for
the year ended December 31, 1937, showed that 1,427 dhows had
arrived at Mombasa, an increase of ten percent on the previous year.
These 1,427 dhows were computed to register -- if they had been re-
gistered -- nearly 40,000 tons. Many were Swahili, from Lamu and
Zanzibar, but a large proportion was Arab. There was a native harbor
set aside for them, and here we sold salt, landing it in our own longboat.
K We got rid of our surviving passengers, gave feasts to merchants and
MA officials of the native harbor (these were a great feature of the voyage,
[579] and were always accompanied by much monotonous singing and dancing),
gathered tidings from brother nakhodas from Kuwait and Sur about trade
prospects further south, collected debts, and finally departed toward
Zanzibar.

K There were three Indian and one Iranian deep-sea dhows in the port at
MA Mombasa. The Iranian was an enormous vessel of over 400 tons -- the
501 largest dhow I saw anywhere. She was a boom and had been built at
•396 Kuwait, but the Kuwaiti sold her because they found such large vessels
439 uneconomic, in bad times, for the mere reason of their two great
capacity. They brought too much to sell, when the market was depressed,
and they could not wait indenfinitely to dispose of their cargoes because
their overhead was too high, despite the fact that everything possible
was done to keep down building costs, even to the sending of Kuwaiti
shipwrights to the Malabar coast to build big vessels there, rather than
carry the timber to Kuwait.

K Zanzibar, at that season of the year, was an even busier Arab
MA port than Mombasa. In the first month of the northeast season,
439 over a hundred ocean-going dhows had arrived at Zanzibar, most

721 619 Parts of this coast are as dangerous for Europeans as for Arabs, and in some instances more so for Europeans. Even as late as December 1949 on the supposedly peaceful coast of the Aden Protectorate an act of violence occurred against a British-owned yacht. I talked to the survivors several months later in Mukalla. They related how the 110-foot motor launch *Anne Loretta* with an Englishman, his wife, and one Arab crewman was cruising a little off shore when she touched a sand bar. The captain went ashore to lay out a stern anchor and was seized by the Arabs of the local Ardiab tribe on the coast; then his wife and the Arab went ashore to see what had happened and were likewise seized. Several British officials to whom I talked admitted that these two English people came very close to death in the hands of these unpacified coastal inhabitants. The British explanation was that the area was between the Eastern and Western Aden Protectorates where the tribes had not been pacified, and the yacht should never have landed there.

IV

505 Every Arab dhow of ocean-going tonnage has a captain *(nakhoda)*, a mate, three quartermasters (or helmsmen), a boatswain, and perhaps a boatswain's mate in addition to the crew. The total complement on a 100-ton ship may be from twenty to twenty-five men, while on a 200-ton ship there will be from thirty-five to forty men. The small coasters of up to 50 tons have crews up to eight or ten; there are no officials on these [291] small craft outside of the *nakhoda*. There is no formal dress on a dhow; often it is difficult to tell the *nakhoda* from the crew, as everyone usually wears simply a loin cloth or the long Arab gown and a head cloth.

A *nakhoda* is much more than the word 'captain' implies; he acts as navigator, pilot, shipwright, sailmaker, ropemaker, agent for buying and selling cargo, agent for freight, agent for recruiting passengers, cashier, bookkeeper, judge, and arbitrator. So completely does the *nakhoda* handle the ship and the ship's affairs that the mate has little to do when the *nakhoda* is aboard. Only when the *nakhoda* leaves the ship does the mate take over; that is the mate's only excuse for existence.

505 396 Many of the Kuwait ships on the run to Africa carry carpenters aboard —not as ship's carpenters, but for the construction of small dhows for sale in African waters. Presumably they can sell them profitably in Africa at a price cheaper than the local boatbuilders! However, a small 10-ton dhow that was built aboard the Kuwait *bhum* on which Villiers sailed down the African coast, had to be left on the beach at Zanzibar in charge of a ship's agent, because the dhow could not be sold at the price de-

manded.[44] Few dhows carry ship's carpenters; they hire a carpenter when they need one. 505 396

The actual duties of a dhow crew may often begin weeks or months before the voyage starts. 505 If the dhow is new, the first duties of the crew are to rig the ship and make the sails (see Plate 20—top). A boatbuilder furnishes only the hull with masts and yards; fitting out the ship is considered part of the work preliminary to making the voyage, and the sailors do not actually receive money for this preliminary work, as they are paid only when the voyage is over. If they actually need it, the *nakhoda* will give the sailors cash advances; these advances are later deducted from the sailor's share of the vessel's earnings at the end of the voyage. Thus the *nakhoda* fits out his ship at no cost to himself so far as labor goes—the crew actually furnishes it for nothing! Besides this the crew does all the stevedoring on any cargo the dhow may carry, also transporting the cargo in the longboat when required (see Plate 19—bottom).

Arab dhows keep no schedule and know little routine. At sea everyone, including the *nakhoda*, usually loses track of time. Friday, the Moslem day of rest, is not observed at sea, so the sailors work the month around and days come to mean nothing; it is easier not even to try to keep track of them. The only track of time the Arabs keep is the occurrence of Ramadhan, [805] the month when the Moslems fast during the daylight hours. The Arabs know whether Ramadhan is before them or whether it has passed; if it is ahead of them, they keep a very rough idea of how far off it is.

When there is no work, the crew sleeps in a shady spot, if one is available—on the cargo or a pad. All hands turn out day and night for any work. It is not uncommon to see a dhow-load of sleeping sailors pass in broad daylight, but they can be on their feet in a second.

Watches are informal and virtually nonexistent on a dhow. Usually the *nakhoda* keeps watch during the day and the mate or a quartermaster or a boatswain keeps watch during the night. It usually turns out that the helmsman keeps watch, as he is the only man who has to keep awake! The carpenter on a Kuwait ship stands no watches and has few other duties outside of his boatbuilding.

There is a general working period of several hours for all hands every day, usually during the morning. The most essential duty is bailing; the foul bilge water is brought up from a small bailing-well in buckets, and is either dumped into a bailing-trough to flow overboard or dumped overboard via a fireman's bucket brigade. The decks are never washed down, as the water would drain below, through the leaky decks, rather than

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[44] A. Villiers, SS, p. 268.

PLATE 20

● 396

The crew that is to sail a new dhow must rig the ship and make the sails first. The photograph shows a set of sails being made at Aden

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Rope making is one of the odd jobs that crew members perform. Here an old sailor makes some rope using his toes as well as his hands

Facing P. 196 (B)

the dhows leave the banks. These men wander through the fleet 228
in their own boats (usually launches) always trying to get to a 437
first quality pearl before the other brokers hear of it, and always hoping that the *nakhoda* will not recognize its value. The broker's paraphenalia consists of a magnifying glass, a small [413] ●
hand balance, weights, and a set of brass screens for grading the pearls. When pearls are sold on the banks they are ceremoniously transferred from the captain's red bunting to the broker's.

Regardless of where they are sold, the majority of the pearls 228
go to Bombay, and from Bombay eventually to Paris, the world's 439
pearl emporium. Pearls are usually shipped to Bombay by air. 456
The reason is simple: Usury and insurance are prohibited by the 784
Quran. If the pearls were shipped to India by Arab dhow or steamer through an Arab agent, there could be no insurance on the consignment. However, if the pearls are shipped via Trans World Airline or British Overseas Airlines Corporation, the pearls can be heavily insured. Thus, the Arabs use a Western agency to get around the Quranic prohibition. In Bombay, Indian workers skillfully pierce the pearls with fine bow-driven drills and string them on silk, graded according to color and size. The pearls are sold to European dealers in bunches consisting of a number of strings and generally known as "Bombay bunches."

When the season has ended and the pearls are sold, the captain 228
deducts the cost of the food and provisions. What is left repre- 465
sents the profit. Of this the owner of the dhow gets one-half; of the remainder each diver and each attendant gets one share and the captain two. Most of the dhows leaving Saudi Arabian ports are small (not over 40 feet) with small crews—usually something like 6 divers, 4 attendants, and a captain. Thus, each diver and attendant would get one twenty-fourth (about 4 percent) of the profits, and the captain would get one twelfth (about 8 percent). The pearling dhows operating out of Bahrein and Kuwait are generally much larger than the Saudi Arabian dhows, and may have crews of 40 or more. The profits of these craft are split in much the same way as the profits on smaller dhows, but the captain gets more shares with these larger crews than he does with the smaller.

hour, after which time the Kuwait diver is dragged out of the 228
water and huddles in some spot on the ship looking more dead 461
than alive. He may average four shifts a day, making a total of 40 dives; O'Shea states that under excellent conditions the Trucial divers average 50 dives a day.[28] During this time ~~he~~ has spent almost one hour under water. Ten dives are not difficult, nor are 50 excessive in one day for anyone experienced; but day after day and week after week the diving goes on—for four months.
When the season is over, the diver has weathered the impossible; 228
he has probably completed over 3,000 dives in from 30 to 50 feet 461
of water, and has spent over 50 hours under the surface of the 147
Persian Gulf—that is, over a full forty-hour week without air, valiantly striving to gather all the oysters he can see through his blood-shot and irritated eyes, which become less sensitive with each dive.

Every ten days or so the divers do get a day of rest, and if the 228
shamal is blowing they have to wait it out, as it roils the water. 461
Occasionally they have to go ashore to bury a diver who fails 147
to complete his 3,000 dives. It is not surprising that there are 164
one or two empty stations on each boat; their occupants lie huddled corpse-like under their cloaks in some part of the ship, too sick from scurvy or plain fatigue to dive. After they have been at it for many weeks, the divers are apt to get convulsive shivers when they come out of the water for their rest, even though the temperature may be 110° F. and their tenders are covered with a lather of sweat. There are few, if any, white men who could [771]
endure just one day of such punishment; the Arab could not either except for his belief that Allah is merciful and that a Paradise awaits him.

Every dhow has to put in for water and food every three weeks 228
or so. In recent years the pearling fleet has used the oil company's 312
pier at Ras Tanura for water, but vessels have been known to replenish their water supply from some of the submarine springs which gush into the Persian Gulf. A diver goes down with an [415]
empty skin and opens it in the potable stream; he can bring up fairly fresh water by this means. One of these submarine springs,

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case stories one hears about the amazing power of the Arabs to stay under water from 5 to 10 minutes or more are absurd.

[28] R. O'Shea, *op. cit.*, p. 137.

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut
Bay side of the Ras Tanura peninsula. All during the fishing season constant
maintenance is necessary (Fig. 13).

Because of its shoal water, Tarut Bay is the only place along the Persian
226 Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
691 suits against the Arabian American Oil Company, asserting that the change
in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
422 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir
[435] rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few
Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras
Tanura area the sale was an economic blow, for much of the fish supplied to
Hasa Province came from the Ras Tanura traps.

ROCK MINING

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[2] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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113 [2] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen,
501 Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87-132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shewes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

5: Harrison D-4 (1912-1924) 1924 M1 Middle East
Maritime Arabs MK2

228 464 tagiously cheerful spirit is prized highly and receives extra good treatment. The season's success, however, turns only partially on the energy and skill of the men. 228 The fluctuations of the market are pure chance as far as the men are concerned, and the success of the catch is an equally incalculable factor. The weather has also to be considered, for in storms it is impossible to dive, and the "forty-day northwest wind," so called, is likely to take a large number of days out of the working calendar.

The pearl banks stretch for miles and miles in the shallow waters of the Persian Gulf. Occasionally pearl-bearing oysters may be found where the water is so shallow that the very low tides of the first and middle of each lunar month leave the bottom of the sea quite uncovered. However, most of the diving is done in water that is at least four fathoms or twenty-four feet deep. Deeper than fifteen fathoms, that is to say ninety feet, no one dives, and the Arabs insist that at greater depth no pearl-bearing oysters are found. Any rocky bottom between these two limits of depths is suitable territory in which to hunt for pearls. Certain banks are noted as affording good hunting, but most of the season's fishing partakes largely of the nature of exploration and guesswork, trying here and trying there in localities where the catch is reported as good. The number of diving boats at work is large, but the territory available is vast and there is no crowding. The banks are scattered along the Arabian coast of the Persian Gulf for perhaps three hundred miles, so the opportunity for each boat is ample.

● [423] These banks are as free as the air. No one exercises any control over them, nor claims the privilege of charging rent for their use. The nominal tax of a diver's share

ECONOMIC RELATIONSHIPS

228 426 Pearling is a great gamble for everyone concerned. A share may be worth only 50 or 100 rupees if the take has been poor, but on the average a share should net at least several hundred rupees. It must be remembered that a share usually represents a year's earning, since the pearling industry operates on the "debt system." This is not to be confused with the "truck system," for the workers in the Persian Gulf pearl fisheries are not paid in produce. In the debt system the divers and tenders get actual cash advances during the seasons they are out of work, and their families get food and supplies while they dive. They must pay off their incurred debts with their earnings after the pearling season, but somehow they never seem able to get free.

228 426 672 Until recently, a diver who accepted cash advances from a *nakhoda* had doomed himself to diving until death, and unfortunately death might not be an exit, as his debt was simply passed on to his son or brother, who then went on to incur his own debt. Once in debt a diver is prohibited from hiring to another *nakhoda*—he must repay his debt to the man who gave him cash advances. A diver or anyone else who accepts an advance in the pearling industry has sold himself to economic slavery, for the *nakhoda* owns his ability to work, while the man must support himself. Thus, a diver is bound to return to the purgatory of pearling at the *nakhoda's* call. Since Muslim law prohibits interest or usury the debt system effectively gets around this. The *nakhoda* is usually in turn bound to some merchant in the same way, for he has taken cash advances to give to his divers and attendants.

567 465 In Oman the *nakhodas* often hire their labor from a tribal agent, giving the agent an advance of money and rice. In the case of slaves, the agent takes this to the slaves' master; at the end of the season he collects the balance of the slaves' earnings. Thus the slaves' earnings go completely to his master, who in return clothes and feeds him.

228 656 426 On Bahrein Island the Bahrein Government has, at the suggestion of the British, effected many reforms in the pearling industry with respect to the debt system. Hereditary debts have been abolished; pearl divers on Bahrein now take their debts to

their graves, and justly, too, for diving probably hastened their 228
end. The Government demands that account books be given each 656
diver and that they be kept up properly, and sends inspectors to 426
see that they are. Before the season begins at Bahrein the amount
of cash advances is agreed upon and proclaimed. The divers have
put up a terrific objection to this limitation, for it seemed to them
that they were simply getting less money. They could not understand that their debt was being lowered—in fact they did not
care, for hadn't they always been in debt?

There is a "diving court" which enforces the arbitrary laws 228
of the industry, such as those dealing with engagement of labor, 698
taxes, spurious pearls, etc. The court also disposes of any case of 686
a *nakhoda* who cannot pay off his debts; the *nakhoda* may lose his
boat and divers, but not his personal property.

There has never been any noticeable effort on the part of the 651
ruling sheikhs to better the lot of their subjects: if they were un- 464
employed for long periods in the winter they would be sure to 461
work harder during the pearling season to pay off their winter's
debts. As the local sheikhs levy a tax on every boat and get a cut 426
of some sort on the proceeds, the pearlers in a sense work for
them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a
farmer, fisherman, or herder there would be little incentive to
enter the pearling purgatory. Under normal conditions the divers
have an eight months' loaf during which time they live off
their *nakhoda;* this is to the liking of both the diver and the
nakhoda.

However, many divers do find other work, as fishermen or 463
mariners. The depression of the thirties hit the Persian Gulf 464
pearl industry with great suddenness. Within a short period tens 505
of thousands of pearlers in the Gulf found themselves without
an occupation. The marine stock of Kuwait rose to the situation
and gradually shifted to cargo hauling between Kuwait and
Basra, Iran, India, South Arabia, and East Africa. Large ocean- [501]
going double-ended dhows have carried the fame of Kuwait
seamanship throughout the Middle East, sailing to Africa on
one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

Kuwait MI1

missed at least another 600, for no list which the dhows supply is really reliable, and each ship carries many persons who are without European documents. As a new dhow arrives, sometimes dozens of her passengers will drop quietly over the side and disperse themselves among the dhows already in the harbour. As with the disposal of the seamen's ventures, all Arabs take a delight, regardless of their ports of origin, in the general defeat of European regulations.

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At first glance, the whole deep-sea trade in dhows seems unorganized and almost unregulated. In point of fact, it is very well organized indeed, and has a tradition going back, probably, some thousands of years. There is no association of dhow owners in Arabia as there is a Country Craft Organization on the west coast of India, for the Arab of today is too inherently disunited and fiercely individualist to make this type of co-operation possible. But he can organize his own trade very well, nevertheless. The typical wealthy business family of Kuwait maintains offices, almost always managed by sons of the house who frequently rotate on the circuit, in all the more important centers of Arab coastal trade. The head office is at Kuwait or perhaps Basra, with branches at Aden (in the Crater, not at Steamer Point), Bombay, possibly one other west coast of India port, and Mukalla. Where there is not an actual branch of the family conducting business on a permanent footing, there is either a trusted agent (probably a relative), or one of the younger sons sent in the trading season to watch the family interests. This, for instance, is done at Berbera, in British Somaliland, which, when times are good, can absorb a surprising quantity of Iraqi dates carried there in dhows. The agent or family member is primarily responsible for the collection of debts — always a problem in a trade which is carried on without banking. A family carrying on business on such a scale will have a finger in perhaps a score big dhows, all nominally "owned" by their own *nakhodas*. The cash resources of some of these families must be enormous, and behind them stands the Sheikh of Kuwait, who was a wealthy man even before oil was discovered in his territory.

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MA 471 ● 426 565 When a deep-sea dhow is built, at least some of the money is put up by the *nakhoda* himself and his family. It is the first essential of the *nakhoda* that he should be from a family of standing in the community, which will pay its debts. Just why such families cannot finance a dhow by themselves I was unable to discover, but the Arab, apparently, has no objection to carrying on business under a cumbersome structure of debt. The merchant, backed by the Sheikh or the ruling family, backs the *nakhoda's* family, who support in turn a trusted and experienced member to take command of the dhow.

MA 565 871 867 It is customary for the boys in such families to go to sea while very young, but they never work as sailors. They are always privileged: no sailor can become a deep-sea *nakhoda*, since obviously if his family is of standing, he would never serve before the mast. The children sail with him sometimes from the age of six or seven, though not regularly. They will make one or two long voyages, looking on and learning but not actually doing anything; then they will remain at home a year or two before going out again. They take command very young. Schooling, at least in 1939, was normally restricted to the local Koranic schools, and rarely occupied more than three months in the year. Only merchants' sons went to the colleges of Iraq, Egypt, and Syria.

MA 565 554 505 Gradually the head of a *nakhoda's* family may attain the status of a lesser merchant himself, though his merchandise is generally limited to the wherewithal to build ships, which comes up in his own dhows from the Malabar coast. But a *nakhoda* himself almost never becomes a merchant, and a merchant's son never becomes a *nakhoda*. Nevertheless, the profession of conducting deep-sea dhows about the waters of the Indian Ocean is a highly respected one, and the shipmasters of Kuwait are, on
MA the whole, a very competent and knowledgeable class, though
[487] few of them can practice much astronomical navigation. Even their long voyages down to Zanzibar or to Calicut are coasting, really down with one monsoon, and back with the other, almost always in sight of land. Their real ability consists in their local knowledge, both of ports and trade.

K MA 505 565 In Kuwait, in 1939 — as now — there were upwards of 10,000 qualified deep-sea sailors. An astonishingly high proportion is of

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Negro origin, the descendants of slaves, though not now slaves MA
themselves. Many others are of Iranian origin. Almost none are 505
Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, 565
the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

As the *nakhoda* class is tied to the merchant by a structure of MA
debt, so also are the sailors tied to the *nakhoda* class in the same 565
way. All deep-sea sailing is paid for on a shares system, and there 426
are no wages. Often the *nakhoda* of the deep-sea dhow has an in- 465
terest in a pearling vessel (though not now to anything like the 228
same extent as in former years), and the sailor may be bound to 428
him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

The sailors go to sea because they know no other life, and they MA 505
make a wretched living by incredibly difficult methods. They 511
have no possessions other than the clothes they stand in, and 342
one or two spare gowns, a good headcloth, and a few sarongs. 291
Their toothbrush is the twig of a tree; their ablutions are made 515
five times daily at a mosque well, or in the sea; they know no 501
shelter and rarely have a bed. The younger seamen, I have no- 565
ticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere.

What keeps the seaman a disciplined and more or less con- MA
tented worker is his hope of reward, principally from smuggling 565
or his own ventures, and his ambition to get hold of a tiny shop 554
in the *suq* of his home town. This is an ambition he rarely 165
achieves. His more usual fate is to die young, especially if he be also a pearl diver.

228 his great toe completely severed by a large piece of faroush that had slipped and hit his foot as he stood on the sea bottom.

Hasa, known to Americans familiar with native construction in Arabia as "sea rock," is found on the sea bottom in more or less solid deposits, from which a diver pries pieces (Fig. 15). Faroush is much more difficult to mine: it takes at least a day to get a boatload, whereas a crew may get three or four boatloads of hasa a day. Faroush is sold by the square measure, hasa by the cubic measure.

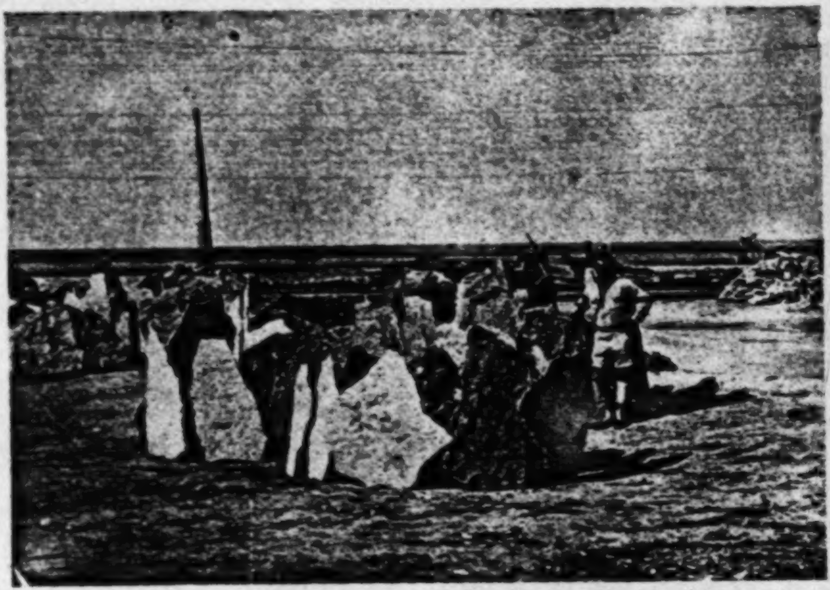

FIG. 14—Author standing by slabs of *faroush* on the shore of Bahrein Island. Faroush is mined near Bahrein in much larger pieces than in Arabian waters. Pile of *hasa* in right background.

228 The rock divers, like the pearl divers, work only in the warmer months.
Since they generally work in water that is shallower than the pearl waters
464 and therefore remains warm longer, the mining season is two or three months
461 longer than the pearling season, which is only four months. The rock divers
do not work constantly, hour after hour, day in and day out, as the pearl
[339 divers do, since each boatload has to be sailed to shore. A small stock pile
317 of faroush and hasa is always maintained in every seaboard town, and most
of its buildings are constructed from these two rocks. Lime is made by burning hasa.

426 The crews mining coral rock work on the "debt system," notoriously
465 exploited in the Persian Gulf pearling industry. Although they are paid good

wages, they are given cash advances and food during the winter and during 421
slack periods. They never seem able to pay off their debts to the dhow 415
owners.

PEARLING

The most colorful marine industry of the Persian Gulf is pearling.[3] 228
Pearling is definitely a seasonal occupation, confined to the months when 132

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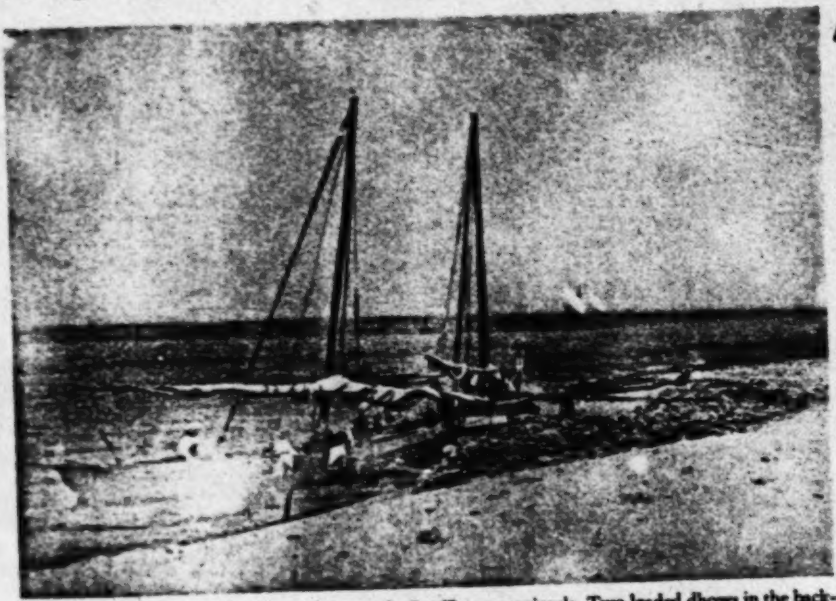

FIG. 15—Unloading *hasa* from jalbuts on the Ras Tanura peninsula. Two loaded dhows in the background are bringing in more.

the water is warm. On the Persian Gulf coast of Arabia the minimum winter air temperature is in the middle forties, the shallow-sea temperature in the low sixties. From long experience the Arabs have found that they can begin deepwater diving in June and continue until the first week in October. At the start and finish of the season the surface-water temperature is about 85°, but the deep-water temperature is considerably less; the maximum surface-water temperature may exceed 100° in August. Before this main season the *ghaus al-kabir* (great diving), there is a season of about two months, known as the *ghaus al-barid* (cold diving), when smaller boats work the shallower waters near their home ports; during the winter many men go out as "waders" at low tide to pick up what they can just below tide level. 113

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[3] See also R. LeB. Bowen, Jr.: The Pearl Fisheries of the Persian Gulf, *Middle East Journ.*, Vol. 5, 1951, pp. 161–180.

228 all end up in Bombay. The Indians drill, polish, and grade the pearls, and
442 string them on silk; these short strands are known as "Bombay bunches."
439 Before World War II the pearls were sent to India by streamer; today they
509 are usually sent by air from Bahrein, Kuweit, Sharjah, and Dharan. The
pearls are usually sold to Indian merchants in these towns, but occasionally the Arabs themselves take the pearls to Bombay.

After all the pearls have been sold, the nakhoda figures out the season's
228 profit. The owner of the dhows gets half the profit; the other half is divided
465 among the crew. Most of the pearling dhows out of Saudi Arabian ports are small (not more than 40 feet), with crews of ten -- six divers and four attendants -- in addition to the nakhoda. Each diver and each attendant gets one share in the profits (about 4 per cent); the nakhoda gets two shares, unless he owns the dhow and longboat, in which case, of course, he gets more than half the profit. The number of shares each of the crew, the nakhoda, and the owner get is agreed on at the beginning of the season and may vary from place to place. Many of the pearling dhows out of Kuweit and Bahrein are considerably larger than those out of the Saudi Arabian ports and may have crews of forty or more; on these the nakhoda gets a larger number of shares.

Pearling is a gamble for everyone concerned, from the merchants to the divers. Some seasons are good, some bad; sometimes a boat has bad luck, sometimes excellent luck. A share on a pearling dhow should be worth several hundred rupees, but it may not be worth fifty.

Usually a share on a pearling dhow represents a year's wages, since the
228 pearling industry operates under the "debt system" mentioned above (not
426 to be confused with the "truck system" of pearl fisheries elsewhere, in which the divers are paid off in produce). Under the debt system the divers and attendants are given cash advances during the winter season, when they are not working, and their families are given food and supplies while the season is on. The advances are deducted from their calculated shares, so that usually the worker gets little or nothing.

Thus the divers and attendants are perpetually in debt. Once a worker is in debt to a nakhoda, he cannot work for anyone else during the pearling season; this is one of the laws of the industry. He has virtually sold himself into economic slavery to the nakhoda, who has his services and never actually has to pay him anything, whereas he in effect pays the nakhoda in the pearls he produces. However, it should be remembered that the nakhoda is in turn usually in debt to some merchant, who commonly finances numerous nakhodas.

228 656 672 426 On Bahrein and in Kuweit the governments have made reforms in the pearling industry. On Bahrein a pearl diver's debts now die with him; in other places a diver's debts are passed on to his son or brother. The Bahrein government also demands that account books be kept for each diver, and the cash advances are agreed upon at the beginning of the season.

228 However, there has been a drastic change in the Persian Gulf pearling industry. The great depression after World War I and the competition from Japanese cultured pearls dealt the pearl fisheries a serious blow. Twenty-five years ago there were nearly three thousand dhows engaged in pearling in the Persian Gulf; today there are not more than six hundred. In the twenties the east-coast ports of Saudi Arabia probably sent several hundred boats to the pearl fisheries annually; today there are not more than several dozen. In the twenties the value of the Persian Gulf pearl fisheries was more than a million dollars; today it is less than a quarter of a million.

228 464 Thousands of divers and attendants were thrown out of work. In Kuweit numerous pearlers found employment on sailing ships traveling to India and Africa. On Bahrein Island many were absorbed by the rapidly expanding oil industry. In Saudi Arabia oil development came late, and the unemployed pearlers had already been absorbed as fishermen, rock miners, and farmers; in fact, so well adjusted were the Saudi Arabian towns that when the Arabian American Oil Company needed large amounts of labor in 1945, it had to hire Bedouins from the desert. Oil came late to Kuweit also; however, here workers were drawn from the marine industries, since the Kuweit Oil Company paid higher wages than the workers could get as sailors, pearlers, or fishermen.

Oil has thus been able to offer salvation to the lowly coastal worker of the Persian Gulf. A man in debt can now get a job with an oil company and pay off his debt. So effective has this proved that the Kuweit, Bahrein, and Saudi Arabian nakhodas have difficulty in getting men to send to the pearl fisheries, or to man the sailing ships going to India and Africa. However, oil has yet to come to Oman, so that pearlers still leave the Trucial Coast in large numbers, and many Oman dhows from Sur still sail down to Africa.

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White radishes	100	5
Lemons	40	5
Other fresh vegetables	400	15
10 live sheep	1100	40
15 live sheep and goats	1500	80
	Total Rs.	1502

It should be noted that rice constitutes one-third of the cost. The other great staple at sea—fish—is not listed accurately, as most of it is caught fresh; probably between two thousand and three thousand pounds of fresh fish was eaten. It should also be noted that no charge occurs for water. The dhow will take a tank of bad water rather than pay for it.

The Arab dhow, regardless of its size, always has a fish-line overboard, 226
and it is not uncommon to see half a dozen lines overboard. I have caught many fish myself trailing a line from a dhow in the Persian Gulf. Villiers[88] states that fishing off the whole African coast is particularly good and that it is not uncommon for the many lines trailed from a Kuwait *bhum* to net twenty to thirty large fish a day. The fish not eaten are cleaned by [251]
splitting, are pounded in salt, and then hung in the sun to dry; the sailors never bother to scale the fish.

The galley on an Arab dhow is simply a spot on the deck. The stove 252
consists simply of an open-sided box with some sand and cooking stones 501
on the bottom (see Plate 21—top left). The larger the dhow the larger the fire-box. The cook cooks everything here with wood fires of palm wood, brush, or driftwood.

On dhows of South Arabia and the Gulf of Aden ports there is also a bread oven. I have never seen these on dhows from the Persian Gulf or Gulf of Oman. The oven consists of a wide-mouthed pot perhaps fifteen or eighteen inches in diameter; this pot is put inside a barrel about two and one-half or three feet in diameter and the space around the pot is filled with sand (see Plate 21—top right). The barrel is firmly lashed together and then is usually securely lashed to the deck. To bake bread, the cook builds a fire in the bottom of the pot and allows it to burn down to the coals. Then he takes a flat piece of dough like a large pancake and pastes this on the inside of the pot; the heat in the walls of the pot and the coals bake the bread. This is the Arab *khubuz*, one of the staples of 262
the Arab at sea as well as on land.

VI

It is difficult for one totally unfamiliar with the Arab East to under- 426
stand the economic system of the Arabs. The tenets of Islam prevent any

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[88] A. Villiers, *SS*, p. 190.

426 banking system, interest, usury, or insurance. The economy of the Arabs is built on a tremendous pyramid of debt which has the lowly sailor, fisherman, farmer, and coolie on the base and a sheikh on top; this system, which may well be called the 'debt system,' operates efficiently and effectively, but has been notoriously overworked in the case of pearling activities in the Persian Gulf.

426 At the start, a merchant will finance a *nakhoda* for building a deepwater
465 dhow.[56] Thus the *nakhoda* is the *nominal* owner of the dhow, but he is indebted to the merchant. If the *nakhoda* had enough money to buy a dhow himself, he would finance someone else and become a merchant himself. This arrangement suits the merchants, for if the ship goes down, the *nakhoda* (or his family) must pay back the value of the cargo and the cost of the dhow as well. Thus the merchant has an 'insurance' on his investment. A merchant may have a dozen *nakhodas* so indebted to him.

The *nakhoda*, on the other hand, has all his sailors and crew indebted to him. He never pays them any regular wages, but gives them advances of food and money when they need it. Thus, as we saw above, the sailors have to make the sails and rig a new ship if they are to sail it. Only when the voyage has terminated six months or a year later, and the ship has been beached in the home port, do the sailors get their share of the earnings of the voyage. But by this time many of them have no share coming, as the *nakhoda* usually has advanced them more than their share amounts to, so he must give them another advance; this is to the *nakhoda's* liking, as he then has the sailors indebted to him. Once a sailor owes a *nakhoda* money, the sailor cannot ship with another *nakhoda* until the debt is paid. The sailors pay for only half of what they eat, for when it comes to the final accounting (if such a civilized term can be applied to the figuring), the total food cost is subtracted from the gross earnings.

The *nakhoda* receives about four or five times the sailors' share, while the mate receives about half as much as the *nakhoda*; some members of the crew receive a little more than the common sailors. The shares received by the twenty-seven men eligible for shares on the Kuwait *bhum* on which Villiers[57] sailed in 1939 are as follows:

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	5	1	5
Mu'allim (mate)	3	1	3
Quartermaster	1½	3	4½

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[56] Not everyone can become a *nakhoda*, for the *nakhoda* must come from a family which can pay the debt if the *nakhoda* should be unable to.

[57] A. Villiers, *SS*, p. 425.

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Serang (boatswain)	1½	1	1½
Serang's mate	1¼	1	1¼
Cook	1½	1	1½
Steward (storekeeper)	1¼	1	1¼
Sailors	1	18	18
Total shares			36
Nakhoda's extra 4 and mate's extra 2 shares			6
Net shares for crew's half of dhow's earnings			30

The *nakhoda's* four and the mate's two extra shares are taken from the ship's part of the earnings. On the voyage that Villiers made, the ship grossed 9,600 rupees and spent some 1,500 rupees on foodstuffs; this gave a net earning of 8,100 rupees. Half of this was considered the crew's share for the voyage, so the thirty shares were worth 135 rupees each (after the *nakhoda's* and the mate's extra six shares were deducted from the total shares). The ship's expenses and upkeep, as well as the *nakhoda's* and the mate's extra shares, came from the dhow's earnings; the balance went to the merchant financing the vessel. If we assume that the yearly upkeep of the dhow was 1,000 rupees (which it never would be, as the crew does all the work on their share of the earnings), the owner's share on his investment of 12,500 rupees (the total original cost of the completed dhow) was 2,240 rupees, or approximately eighteen per cent. However, this is probably closer to twenty per cent, as the yearly upkeep probably did not run over 500 rupees. This would not hold up under strict accounting, as no depreciation has been charged off. Also no insurance on hull or cargo was carried as there are few if any Arab insurance firms. However, when Arab craft make return trips from India they usually insure the cargo with an Indian firm.

Villiers[18] estimates that the sailors might have netted twenty rupees extra in their own trading, that the mate might have made several hundred, while the *nakhoda* might have made a thousand rupees in his deals—mostly from Persian rugs and carved chests. Thus the owner received a twenty per cent return on his investment for the year, while the sailors received about 150 rupees ($45.00) then for a year's work. That seems rather unbalanced, does it not?

I have found the same general system of shares applying to pearling and fishing activities as well as to mariners in the Persian Gulf, the Red Sea, and along the coasts of South Arabia. In general, however, it is more

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[18] Ibid., p. 426.

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clean-cut in Villiers' case, as all the shares of the *nakhoda* and the mate come from the crew's half of the net earnings. On the 240-ton *sambuk El Wafi*, which I boarded in Aden in 1950, the shares were as follows:[59]

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	4	1	4
Serung (mate)	2	1	2
Sukhani (quartermaster or helmsman)	1½	3	4½
Muqaddam (boatswain)	1¼	1	1¼
Katib (clerk)	1½	1	1½
Wakil (steward)	1¼	1	1¼
Bahri or *mallah* (sailors)	1	33	33
Total shares			47½

In India some crews are paid on a salary basis, but many others work on a share basis. However, in India the owner takes one-third of whatever the ship earns. Then the craft's expenses while she was at sea and the supplies for the crew are deducted from the remaining two-thirds; the remainder is then divided among the captain and crew according to shares.[60] By dividing the profits in this manner the Indian owner gets about a quarter less than the Arab, while the Indian crew gets about ten per cent more.

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The largest importer and exporter in Aden, and probably the whole Gulf of Aden for that matter, is A. Besse and Company, operated by a shrewd Frenchman, Mr. Antone Besse. Among Besse's various holdings in the Middle East are twelve dhows, all registered in Aden. The *El Wafi* was one of the twelve *sambuks* owned by A. Besse, and operated in the Gulf of Aden and the lower Red Sea. On the average these dhows made four trips a month. The *nakhoda* was given advances, which he in turn gave to the crew, before each trip. After four trips the gross return for

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[59] It will be noted th[illegible] the Arabic names in Villiers' list of the members of the crew on a Kuwait *boom* and in my li[illegible] the members of the crew of an Aden *sambuk* are not the same; however, this does not mean [illegible]at either is necessarily wrong. The Arabic names on my list were checked from three independent sources in Aden, and my informants in Aden recognized Villiers' *muʿallim* as the word the Kuwaiti used for 'mate.' Villiers indicated on his list 'quartermaster' but did not give the Arabic for the word. The Arabic word that I found in use in Aden for this member of the crew was *sukhani*, which comes from *sukhan*, the Arabic for 'rudder.' Thus it would seem that the more proper translation of the word is 'rudder-man' or 'helmsman,' although his position on the dhow is really that of 'quartermaster.' The word *muqaddam* is the word commonly used on land to refer to a 'headman' who is the leader of any other group of working-men. However, on a dhow the *muqaddam* is the man who superintends the letting go and the weighing of the anchor, so the translation of the word when applied to seafaring men is properly 'boatswain.' The important fact evident from the two lists is that there is always a consistency in the top officers of a dhow—there are a captain, a mate, three quartermasters (or helmsmen), and a boatswain, irrespective of the Arabic name by which they are known.

[60] K. B. Vaidya, op. cit., p. 41.

the cargo the dhow had hauled was figured and the cost of the food consumed 426
by the officers and crew was deducted, giving the net earning of 465
the dhow. One-half belonged to the crew and was divided into forty-seven 471
and one-half shares as shown above. The other half belonged to the owner, and represented his return on his investment; the owner had to maintain the dhows from his half of the earnings. As we saw above in the case of the figures presented by Villiers, the owner has little to deduct from his share of the ship's earnings, so his return on his investment is considerable. It is little wonder that Mr. A. Besse was recently able to give Oxford University a contribution of £2,000,000!

Over one hundred years ago, the French Admiral F. E. Paris spent considerable 477
time in the waters around Muscat and wondered how Arab ships could at that time compete with the more efficient European sailing ships. Paris summed up his conclusions as follows:

> ... les Arabs qui les montent habitués au retour périodique des moussons, n'exécutent, en general, qu'un voyage par an ... [ils] entendent bien le commerce; malgré cela, ils sont rarement employés par les Europeans ... et, comme ils ne prennent que de très-faibles cargaisons, ce n'est que grâce à l'extrême économie des Arabs qu'ils peuvent servir pour le commerce.[61]

Only a decade ago, one hundred years after Paris, men of other lands were still wondering how an Arab sailing fleet could possibly survive in the present era of oil and steam; to satisfy his curiosity Alan Villiers dedicated a year of his life to sailing with the Arabs in their dhows. Villiers has summed up the reasons for the survival of the dhow fleet as follows:

> One reason—perhaps the chief—why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and his vessel pays practically no port dues.[62]

While in Aden in 1950, the writer investigated the intriguing problem 505
of dhow economics, as applied to the coastal craft operating around

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[61] F. E. Paris, *Essai sur le Construction Navale des Peuples Extra—Européens* (Paris, Bertrand, 113
[1841]), p. 9. '... the Arabs who man them, accustomed to the periodic reversal of the monsoons, carry out, in general only one voyage a year ... they understand commerce well; in spite of that, they are rarely employed by Europeans ... and, as they carry only very poor cargoes, it is only because of the extreme economy of the Arabs that they can be of use for commerce.'

[62] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 400-401.

craft furnish the only transportation to many small off-the-track ports. In addition to this it must be remembered that the dhow (or other native 502
coastal craft) can navigate shallow harbors and creeks, while a steamer could not get closer than several miles. Thus there will always be a place for these short range coasters. However, the future of the deepwater dhow is another question.

The debt system has worked for centuries to the economic advantage 426
of those financing the dhows, and to the economic disadvantage of those 465
working on them. It has been impossible for the sailors to break away, as 505
they can never work for another *nakhoda* when in debt to one. There is only one way to break away, and that is to pay the debt. Becoming a farmer or a fisherman does not help, as they usually operate under the debt system also.

On its face in such a financial set-up the merchant has everything to gain and absolutely nothing to lose. In the case above (where the shares, and thus the sailors' wage, were worth about 150 rupees and the merchant made eighteen per cent on his investment on the dhow), if the dhow had made only one-half of what it had, the merchant would still have received about ten per cent on his investment, but the poor sailors would have received only 75 rupees ($22.50) as a year's wage. Thus the dhow can compete against steam only at a sacrifice of the unfortunate economic slaves sailing the dhow. The dhow sailors do all the stevedoring, maintenance work, and sailing for their lowly share of the dhow's earnings; if the sailors received a decent wage (even if only on Eastern standards), the deepwater dhow could not stay afloat as a cargo vessel. Coastal craft operating short distances do pay higher wages on the average than the deepwatermen.

However, the advent of the large oil companies in the Middle East has provided a means wherein the sailors can escape from the bonds of economic slavery. By making jobs which pay good money (on Eastern standards) dhow sailors are able to free themselves of their debts and become free men. We have seen above that the oil companies in Saudi Arabia and on Bahrein Island have decreased the number of boats the pearl fisheries can send out, as they cannot get divers to work for the wage they can offer. Kuwait has long been able to keep a large deepwater cargo fleet of *bhums* on the waters around the Indian Ocean because Kuwait had a surplus of cheap labor—there was little else to do in Kuwait besides work in marine activities. Now that the Kuwait Oil Company has made jobs available to the local Arabs, the cheap labor market is gone for the Kuwait *nakhodas*. Thus as the standard of living is increased and cheap labor

426 465 505 becomes no longer available, the deepwater dhow is doomed. The dhow cannot operate in competition with steam if it has to pay the sailors respectable wages; that is, as long as the merchants demand one-half of the dhow earnings.

511 While traffic in human cargo is virtually a thing of the past, the dhows that coast along the Arabian, African, and Indian shores still have slave crews on them. Although not owned bodily, the crews are bound economically to their masters, the *nakhodas,* while the *nakhodas* themselves are economic slaves of the merchants. But, while the crews get little actual compensation when the pay-off finally comes, they are happy and well-fed and have known nothing else. Allah is compassionate, and there is always a Paradise waiting for their poor souls!

Maritime Arabs MK2

From the proceeds of the season's catch one-fifth is 427
turned over to the owner of the boat as rent for its use, 465
and from the remainder the season's expenses for food, 228
water and the like are deducted. The money that is left 466
represents the profits of the season. Each diver receives an equal share of this; each assistant two-thirds of a share. The captain, who has done no diving but has superintended the season's campaign, receives a diver's share, as does the sheikh of the town in some instances, this being the government tax upon the industry.

This seems a good system. In theory it could hardly be improved, but in practice it could hardly be worse. The divers cannot read or write, so they have no way [212]
of knowing whether or not their accounts are correctly kept. They may not assist in, or even witness, the process of sale, so they have not the slightest control over the captain, nor any means of protecting themselves from dishonesty on his part. The captain himself is between the upper and nether millstones, for the only way he can rent a diving boat is by promising to sell his pearls to the owner of that boat, and from this owner he may receive not over fifty per cent of their market price. Even this reduced price the divers do not receive undiminished, for the captain enriches himself privately at their expense before the sale is reported. Then as if matters were not bad enough, almost without exception the men are in their captain's debt, and remain so throughout their lives.

The fact that nearly all the divers are in debt is partly 426
their own fault. When a man begins to dive, he could [465]
avoid borrowing money if he were at all determined to do
so. The diving season lasts only five months at the out- 466
side, and the season's proceeds may be sufficient to live on for the whole year with economy and care. If they

426 are not, work can be found to tide over the winter months. 466 That, however, is not the usual course of events. The boy who has five hundred *rupees* in his pocket for the first time in his life is eager to have a good time. Inside of a month or two all the money is gone. The captain encourages this procedure, and assures the boy that he will gladly lend him any amount desired. The one thing that the captain desires is to lend this new diver some money, and his zeal to make himself accommodating and friendly is sometimes quite ludicrous. With most of his new men, unfortunately, there is little difficulty. The season's proceeds are gone inside of a few weeks, and before the winter is over, the diver is in debt for an amount equal to the sum he earned, or quite possibly even greater.

The diver is now a slave for the rest of his life. It is probably easier for a negro slave on the Pirate Coast to escape than it is for a Bahrein diver to regain his freedom. As long as he is in debt he cannot change his employer, no matter how badly he is treated, nor can he leave the town except under bonds to return before the diving season begins. And he never will be able to get out of debt. He cannot read or write. There is no witness to the transactions that take place between the captain and himself. It is the recognized thing for divers to receive a loan of rice when the season begins, so that their families may have something to eat while the head of the house is away. The sum written into the books is regularly about fifty per cent greater than the market price of the rice. If necessary, entirely false entries are written in. The upshot of the matter is that these men never get out of debt, not one in a thousand of them. In seven years' residence in Bahrein, I have never yet met a diver

who had "escaped from the account book," as the Arabs 466
put it.

The amount that a season's work brings in is now a matter of indifference. However great it may be, all that happens is that the sum is written to the diver's credit on the books, and he is given an advance when he asks for it and the captain is willing to allow it. There are certain times during the year when it is the custom to give these advances—the beginning and the close of the diving season and once or twice during the idle months. A good season means somewhat more liberal advances and a bad season smaller ones. The diver, however, is absolutely at the captain's mercy in all this. As a matter 511
of fact he gets in ordinary years an amount that is sufficient for life, and a more comfortable life than that of the Bedouin. The diver's standards of life, however, are considerably below those of a date gardener in a good oasis. It is to the captain's interest, of course, to have 466
his men more or less well fed and satisfied, and to have 426
the glamour of pearl diving maintained so that others will be attracted to the work, so a great show is made of calculating the season's receipts and the rare man who is not in debt really does get a fairly liberal reward for the season's exhausting labor. The crucial point, of course, is the law that prevents a mistreated and dissatisfied diver from changing his employer or from changing his residence. The captain could afford to give his men an amount that would allow them a considerably better mode of life. Doubtless if public sentiment becomes too threatening, he will do so. The thing he will not do is to consent to any alteration of the law that at present delivers the debtor into his hands,

466 426 body and soul. The one redeeming feature of the system is that debts are not transmissible from father to son and theoretically each boy starts out with a clean slate, but too often the filial loyalty of the son is appealed to and he assumes his father's debts. This plan allows the old man to retire from his life of hardship. Nothing suits the captain better, for thus the boy is deprived of his only chance to keep free from the slavery that has bound his father.

465 But in spite of its financial drawbacks the work has a great fascination for the Arab, and this is largely because of its element of chance. The Oriental is an inveterate gambler, and the Arab is no exception. Some years the reward of an individual diver may be next to nothing. Another season he may make a thousand *rupees*, or about three hundred and fifty dollars. Over night the whole aspect of the season may change. A pearl worth fifty thousand *rupees* may be discovered at any time. The largest pearl sold locally during the past ten years brought one hundred and twenty thousand *rupees*. Arabs tell of boats whose divers have cleared over two thousand *rupees* or more in a season, but such mythical individuals are hard to find. It is far easier to find the man who has failed to make two *rupees*. However, to do the industry justice, such individuals are rare also. In fair seasons the average must lie somewhere between three hundred and seven hundred *rupees*, or one hundred to two hundred and fifty dollars.

465 517 At the end of the season the profit, such as it is, is reported and the money divided. The divers each receive their share, and the assistants each two-thirds of a share. Men in debt receive a more or less liberal allowance, and the town is filled with rejoicing divers who have just re-

The larger ports of
Kuwait, Bahrein and Dibai have also a large community 468
of artisans and lesser merchants. These serve not simply 441
the local diving population, but also act as manufacturers 439
and wholesalers for the whole of Central Arabia. Practically the entire import and export trade for the interior of the peninsula goes through these three towns, and the merchant and artisan communities are large and prosperous.

It is difficult to be optimistic about the general situa- 735
tion in these pearl-diving communities. The actual ma- 511
terial condition of the divers is bad enough, but worse 454
by far is the discouragement and despair that have set- 426
tled down upon the whole community. No one tries very hard to get out of debt, for he knows that barring some unforeseen miracle, he cannot do so no matter how long and hard he works and how economically he lives. There is little thrift; a stranger is often shocked by the waste that divers show in their personal and household expenditures. There is not the slightest effort, for instance, to discover what sort of clothing will give the most service for the money invested. Expensive or cheap, economical or wasteful, it is all the same. With luck when the present supply of money is gone, the captain will make another liberal allowance, and nothing better than that can be hoped for, no matter what economy and thrift are practised.

The conditions outlined above are those that obtain in the northern towns, chiefly in Bahrein. There is a sec- 721
ond large diving community in the region known as the Pirate Coast, whose capital and largest city is Dibai. Its piratical character is a matter of history now long past, but it still makes a good deal of trouble for the British who police the Gulf and maintain order along the coast.

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and from the remainder the season's expenses for food, 228
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so. The diving season lasts only five months at the out- 466
side, and the season's proceeds may be sufficient to live on for the whole year with economy and care. If they

Kuwait MI1

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MA 505 565

Negro origin, the descendants of slaves, though not now slaves themselves. Many others are of Iranian origin. Almost none are Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

MA 565 426 465 228 428 ●

As the *nakhoda* class is tied to the merchant by a structure of debt, so also are the sailors tied to the *nakhoda* class in the same way. All deep-sea sailing is paid for on a shares system, and there are no wages. Often the *nakhoda* of the deep-sea dhow has an interest in a pearling vessel (though not now to anything like the same extent as in former years), and the sailor may be bound to him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

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The sailors go to sea because they know no other life, and they make a wretched living by incredibly difficult methods. They have no possessions other than the clothes they stand in, and one or two spare gowns, a good headcloth, and a few sarongs. Their toothbrush is the twig of a tree; their ablutions are made five times daily at a mosque well, or in the sea; they know no shelter and rarely have a bed. The younger seamen, I have noticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere.

MA 565 554 165

What keeps the seaman a disciplined and more or less contented worker is his hope of reward, principally from smuggling or his own ventures, and his ambition to get hold of a tiny shop in the *suq* of his home town. This is an ambition he rarely achieves. His more usual fate is to die young, especially if he be also a pearl diver.

Bahrain M22
Maritime Arabs MK2

000 fering to the common people. Nothing of that sort has ever happened in the pearl market. French dealers from Paris maintain an establishment throughout the year in Bombay where any man may come to sell his pearls. These men speak Arabic fluently and they buy the pearls in person. For about three months of the active season they send up one of the partners of the firm to act as purchaser in Bahrein itself, so that the Paris market is practically available to the poorest merchant and diver in Bahrein. It is a pleasure to testify to the fine character and courteous business-like dealings of these buyers. If Arabia's contact with the West could be confined to men of their type, her path would have fewer thorns and stones. A host of smaller Arab and Indian buyers pick up a certain percentage of the catch and handle it, partly with an eye to legitimate business and partly as a speculative venture. There is always a large amount of speculation in Bahrein and Bombay in connection with the fluctuations in the value of the pearls. Like every other sort of speculation, it carries with it a great temptation, and many are fascinated by the prospect of buying cheap and selling high. They often work with large sums borrowed from others and end with a crash, completely bankrupt. Fluctuations in the pearl market are very wide; pearls worth a thousand *rupees* this season may be worth double that or half of it the following season. Indeed on rare occasions they may drop to one-half their value overnight. Almost every one gets the fever for speculation during the season. I remember seeing an old slave bring to a pearl dealer a few small and misshapen pearls. "I bought these," he said, "for eight *annas* (sixteen cents); I am hoping to sell them for twelve *annas*."

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CHAPTER IV

PEARL DIVERS OF THE EAST COAST

ALONG the East Coast of Arabia are located the 228
largest pearl fisheries in the world. Pearl fish- 433
ing has been the occupation of that part of 162
Arabia for many centuries. Probably a hundred thousand Arabs are engaged in this hard and dangerous work throughout the summer months. Half a million people must depend on these divers for their livelihood. This is not a large percentage of the inhabitants of Arabia, but the pearl divers are worthy of consideration, for the outside world has come into closer contact with them than with any other Arab community in the entire peninsula. As might be expected, the coast cities contain artisans, laborers, a few date gardeners, and merchants. These differ in no significant way from similar classes elsewhere. The pearl diving community is unique.

Nothing can exceed the barrenness of the coast where 311
these men live. From Kuwait in the north to Ras el 433
Kheima in the south, a distance of three hundred miles, 312
scarcely a green thing is to be seen, except for a few miles of date gardens at Katif and a smaller number at Dibai. The water available for drinking is brackish and almost undrinkable in many places. The inhabitants of Umm el Qaiwain, one of these towns, "drink mud," to quote the Arabs. The coast is so utterly unproductive that all food must be imported, and in some places even the fuel and drinking water.

£300,000.[1] Wellsted stated that in 1835 the total value was 228
£400,000.[2] Zwemer stated that the value of pearls shipped from 439
Bahrein in 1896 was £303,941.[3]

Cox gives the value of pearls exported in 1925 as £220,000 from Bahrein and £9,000 from Lingeh in Iran, and for 1926 as £192,000 from Bahrein, £11,000 from Kuwait, and £5,200 from Lingeh (a total of about £208,000 for 1926); Cox further states that the true value was probably ten times these figures, for reasons he fails to clarify.[4] However, Thornburg has accepted this last statement of Cox's as a fact and has arrived at a figure of $10 million for the value of the Bahrein fisheries in 1926,[5] a figure that is unreasonably high. Thornburg estimates that in the years immediately following World War II the value of the Bahrein pearl fisheries was about $250,000; Kruegar states that in 1949 the value of the Bahrein pearl fisheries amounted to $200,000.[6] Rihani gives figures for the whole Gulf which amount to about $15 million,[7] the most absurd value published.

A summary of the more reliable figures would seem to be as follows:

1830's	$1,500,000
1835	2,000,000
1896	1,500,000
1925	1,200,000
1926	1,000,000
1946	250,000
1949	200,000

As can be seen from the above table, the value of the fisheries 228
dropped to only a fraction of its previous value after the world 439
depression of the thirties. It should also be pointed out that due to
world inflation the figure of $200,000 for 1949 represents less than 435
$100,000 on 1926 monetary standards. However, while the depression dealt the Gulf pearl fisheries a devastating blow, its

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[1] D. Wilson, "Memorandum Respecting the Pearl Fisheries in the Persian Gulf," *Geographical Journal*, III (1883), p. 284.

[2] James R. Wellsted, *Travels in Arabia* (London, 1838), p. 264.

[3] Samuel M. Zwemer, *Cradle of Islam* (New York, 1900), p. 100.

[4] Percy Z. Cox, "Persian Gulf," *Encyclopedia Britannica* (Chicago, 1946), vol. 17, p. 605.

[5] Max Thornburg, "Bahrein," *Encyclopedia Americana* (New York, 1949), vol. 3, p. 43a.

[6] H. C. Kruegar, "Bahrein," *Collier's Encyclopedia*, II (New York, 1949), p. 668.

[7] Ameen Rihani, *Around the Coasts of Arabia* (London, 1930), p. 275.

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Kuwait MI1

K MA 506 437 [396]

repayed, and already was loaded with her cargo of salt and rice in sacks, and some mysterious parcels on deck for the Sultan of Mukalla. All her crew had their sea chests filled with trade goods from the cheap *suq* in the Crater at Aden; her carpenter was at work on a 40-foot dhow for sale on the voyage; and she had shipped several Suri and Omani merchants, from Aden, bound on a general trading voyage on their own account, wherever the dhow might take them.

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We sailed first to Mukalla and Shihr, where we embarked passengers (the fare was eight rupees regardless of destination, the passengers providing their own food and looking after themselves entirely) and some further cargo. This consisted mainly of a parcel of condemned dates which it was hoped to sell to the Somali (or failing that, to feed to the Swahili labor in the Rufiji Delta, when loading mangrove poles), some dried shark which smelled high even aboard the dhow, some cooking stones, and a considerable quantity of basketware.

With this lot aboard, and the *nakhoda* pessimistic and depressed at the small number of passengers, though his dhow appeared crowded, we sailed first to Haifun, a salt port on the northeastern coast of Italian Somaliland. There we anchored among a fleet of dhows, and did nothing at all for some time. Finally, some rice was sold, some haberdashery smuggled into boats which the local Somali brought alongside, and lot of fish caught and dried. Then we went on to Mogadishu, running down the coast with the northeast monsoon. At Haifun another Kuwait ship was caught smuggling and heavily fined; and all the Kuwaiti in the harbour contributed to pay the fine. At Mogadishu, it was hoped to land a hundred or so passengers, but the Italians would not permit them to disembark. Trade there was extremely difficult, and little could be done. Some of the merchants left, as far as I could gather, to try to collect debts owing to them from previous voyages. Some smuggling went on (I saw a lovely carpet change hands), some of our passengers melted away and their places were taken by others, equally undocumented.

K MA 501 439 435

After a week or ten days we passed on down the coast to Lamu. Here more passengers landed and there was a determined attempt to sell the new dhow which the carpenter had completed. She

K was a lovely little vessel which could carry some fifteen tons. The
MA price asked was 1,000 East African shillings, or about $240. At that price,
501 there was no buyer; she finally changed hands at 700 shillings. Lamu was
439
•435 a mangrove-pole port, but I gathered the trade was rather too well regulated for our nakhoda's taste, and we bought nothing.

K Next came Mombasa, a port with a large dhow trade. Some figures I
MA saw in the Report of the General Manager on the Administration of the
439 Railways and Harbours (Kenya and Uganda) showed that the dhow trade
505 was increasing, rather than diminishing. The latest returns I say, for the year ended December 31, 1937, showed that 1,427 dhows had arrived at Mombasa, an increase of ten percent on the previous year. These 1,427 dhows were computed to register -- if they had been registered -- nearly 40,000 tons. Many were Swahili, from Lamu and Zanzibar, but a large proportion was Arab. There was a native harbor set aside for them, and here we sold salt, landing it in our own longboat.
K We got rid of our surviving passengers, gave feasts to merchants and
MA officials of the native harbor (these were a great feature of the voyage,
[574] and were always accompanied by much monotonous singing and dancing), gathered tidings from brother nakhodas from Kuwait and Sur about trade prospects further south, collected debts, and finally departed toward Zanzibar.

K There were three Indian and one Iranian deep-sea dhows in the port at
MA Mombasa. The Iranian was an enormous vessel of over 400 tons -- the
501 largest dhow I saw anywhere. She was a boom and had been built at
396 Kuwait, but the Kuwaiti sold her because they found such large vessels
439 uneconomic, in bad times, for the mere reason of their two great capacity. They brought too much to sell, when the market was depressed, and they could not wait indenfinitely to dispose of their cargoes because their overhead was too high, despite the fact that everything possible was done to keep down building costs, even to the sending of Kuwaiti shipwrights to the Malabar coast to build big vessels there, rather than carry the timber to Kuwait.

K Zanzibar, at that season of the year, was an even busier Arab
MA port than Mombasa. In the first month of the northeast season,
439 over a hundred ocean-going dhows had arrived at Zanzibar, most

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut
Bay side of the Ras Tanura peninsula. All during the fishing season constant
maintenance is necessary (Fig. 13).

Because of its shoal water, Tarut Bay is the only place along the Persian
226 Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
691 suits against the Arabian American Oil Company, asserting that the change
in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
424 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir
● 435 rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few
Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras
Tanura area the sale was an economic blow, for much of the fish supplied to
Hasa Province came from the Ras Tanura traps.

ROCK MINING

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[2] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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501 [2] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen, Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shewes* and *bellams* are also used by the fishermen (see Fig. 4 of the present article).

turned from four months or more of exhausting work, 465
during which time they have been half starved and have 517
had no opportunity of finding enjoyment and pleasure,
legitimate or otherwise. The result[1] is precisely what 435
might be expected. Persian rugs in the bazaar go up 517
to twice their proper price as does anything else that the
divers may fancy. Meat reaches the highest price of the
year, and the same is true of fish, which food the divers
enjoy above everything else. Gambling is all but universal.
Immorality flourishes. This state of affairs
lasts a month, perhaps two months. Then things gradually
settle down into the regular winter stagnation until
the next diving season.

The same thing happens on a smaller scale when the 517
season opens. Advances are made to the men. Feasts 288
are held. There is much good fellowship and coöperation 465
as the preparations for the season are completed.
The chanting of singers can be heard late into the
night. The money advanced by the captains makes a
great show as it is spent. Strangers come in from far
and near to go out and dive with the local men, and the
city wears such a gala appearance as it scarcely puts on
again till the next season.

It is thus that an astonishingly attractive tinsel surface 565
is maintained over an industry and a manner of life that 228
even for Arabia are bitterly sordid and exhausting. The
pearl diver's life is one of poverty, hard and cruel. In a
bad season it is with difficulty that he gets enough to eat.
His lot is distinctly worse than that of the date cultivator.
Diving wrecks the health as no other Arabian occupation 228
wrecks it. The high pressure of the water at great depths 164
frequently bursts the ear drums, and it is a safe co[illegible]jecture
that no community of equal size anywhere can [illegible]w

[1] [of divers returning with their wages --Analyst]

228 The captain watches the whole procedure closely to see that no pearls are secreted; when the last oyster is opened, he collects all the pearls, ties them in a small red cotton flannel cloth, and puts them in his sea chest on the poop deck.

The Persian Gulf procedure for opening the oysters is in vivid contrast to the practice of some of the other pearl fisheries. In Ceylon, for example, all the oysters for any one day are brought into the yards of the company holding the concession to the banks. Each diver carries his own oysters up to the stockaded compound where he divides them into three piles. The company inspector comes around and tells the diver which pile he can take; when he leaves the compound he has to give back a portion to his attendant and to the captain of the boat.

There is evidence that some such practice may have been carried out along the Arabian coast in the past. A century ago the pearlers of the Trucial Coast opened their oysters on land, for Whitelock relates that the pearlers remained at sea until they had a boatload of oysters and then proceeded to the nearest island to open the shells.[33]

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172 During medieval times the Arabians on the mainland controlled Bahrein Island; their capital was at Hofuf. Huge heaps of oyster shells, some a hundred yards long, stretch along the shore a mile south of al-Khobar. Nearby have been found grinding pestles, stone diving weights, and crude pottery fragments. The species of oyster in these mounds is the same small variety commonly found today. When the refinery at Ras Tanura was being built, a low hill was leveled by bulldozers. Cutting through many ancient graves they turned up a stone diving weight among the numerous bones and pottery. Between Jubail and Ras Tanura, several more ancient shell heaps have been located high on the beach. Some of these are composed *entirely* of the large plate-sized species of pearl oysters; now this species is found only occasionally.

MARKETING AND DIVISION OF PROFITS

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437 The majority of pearls are sold to Bombay merchants, but frequently brokers in search of a bargain will buy the best before

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[33] *Ibid.*, p. 42.

the dhows leave the banks. These men wander through the fleet 228
in their own boats (usually launches) always trying to get to a 437
first quality pearl before the other brokers hear of it, and always hoping that the *nakhoda* will not recognize its value. The broker's paraphenalia consists of a magnifying glass, a small [413]
hand balance, weights, and a set of brass screens for grading the pearls. When pearls are sold on the banks they are ceremoniously transferred from the captain's red bunting to the broker's.

Regardless of where they are sold, the majority of the pearls 228
go to Bombay, and from Bombay eventually to Paris, the world's 439
pearl emporium. Pearls are usually shipped to Bombay by air. 456
The reason is simple: Usury and insurance are prohibited by the 784
Quran. If the pearls were shipped to India by Arab dhow or steamer through an Arab agent, there could be no insurance on the consignment. However, if the pearls are shipped via Trans World Airline or British Overseas Airlines Corporation, the pearls can be heavily insured. Thus, the Arabs use a Western agency to get around the Quranic prohibition. In Bombay, Indian workers skillfully pierce the pearls with fine bow-driven drills and string them on silk, graded according to color and size. The pearls are sold to European dealers in bunches consisting of a number of strings and generally known as "Bombay bunches."

When the season has ended and the pearls are sold, the captain 228
deducts the cost of the food and provisions. What is left repre- 465
sents the profit. Of this the owner of the dhow gets one-half; of the remainder each diver and each attendant gets one share and the captain two. Most of the dhows leaving Saudi Arabian ports are small (not over 40 feet) with small crews—usually something like 6 divers, 4 attendants, and a captain. Thus, each diver and attendant would get one twenty-fourth (about 4 percent) of the profits, and the captain would get one twelfth (about 8 percent). The pearling dhows operating out of Bahrein and Kuwait are generally much larger than the Saudi Arabian dhows, and may have crews of 40 or more. The profits of these craft are split in much the same way as the profits on smaller dhows, but the captain gets more shares with these larger crews than he does with the smaller.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 312 502 438 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 442 439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they all end up in Bombay

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

Maritime Arabs MI:2
Kuwait MI:1

438 All the cities along this coast north of Ras el Kheima
361 are diving communities, and some of them are quite large.
K Kuwait, the largest, has about fifty thousand inhabitants.
161 Kuwait has good harbor facilities, and the government of
228 the city has been notably efficient and strong-handed for
439 many years. A pearl diver may as well live in one coast
312 town as another, and so Kuwait has grown to be a large
262 city. The drinking water for this entire city is brought in specially constructed sailing vessels from the mouth of the Arab River in Mesopotamia sixty miles away. The divers live on rice that is brought them from India, on wheat that comes from Persia, and on sheep from inland Persia and Arabia. The only local product is fish. The physical surroundings of all these towns are very similar to those of Kuwait. The landscape is an unbroken and monotonous expanse of sand on one side
[K and sea on the other. The heat in summer is ex-
132] treme and the air is practically always moist, so that for three or four months in the summer the climate is almost unbearable.

M In the spring the diving community begins to hum
228 with activity. The boats are cleaned up and repaired.
463 New masts are put in and new rigging provided. As the time for diving approaches, supplies of food and water are taken on board. The divers collect from far and near. Most of the population are divers, and in addition many more come from a distance to dive for the season. There are men from every district in Arabia and from all over Mesopotamia; a few come even from the various provinces of Persia. The place is filled with festivities and good fellowship and hopes for a successful season.

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228 The day for embarkation finally comes. The boats
591 are fitted with enormous sails, and also with a full com-

0 00 and set by arbitrary standards. A first grade pearl should have a perfect "skin," i.e., be free from flaws and specks, and should have a fine "orient," that is, a delicate texture of translucent pink or cream color with an irridescent luster. It is difficult to say whether the size, shape, or color of a pearl is the more important. Other qualities being equal, a perfectly symmetrical pearl is more desirable than a pear-shaped or a flat one. There are pearls of all colors —white, black, gray, green, yellow, gold, and pink. The size of the pearl is important only in combination with a desirable color and shape. Luster is probably the most important characteristic of a first-class pearl; other qualities can be more or less lacking if the pearl has good luster or depth. The most perfect pearl in existence is said to be one in the Zosima Museum in Moscow, known as "La Pellegrina," weighing 28 carats. The largest known pearl is an irregularly shaped one in the Victoria and Albert Museum, having a circumference of 4.5 inches.

The value of a really rare pearl increases by leaps and bounds from purchaser to purchaser. A single example is a Persian Gulf pearl purchased by Barbara Hutton for $75,000; the pearl originally sold for $30,000. It is not necessarily on the spot where the pearl is produced that it is most cheaply procured, and if procured, of the finest quality. Arabs in the Persian Gulf know that the Best Gulf pearls may be purchased most cheaply in India. Peddlers may be found in most towns on the Persian Gulf with necklaces of Gulf pearls for sale; however, these have usually been imported from Bombay.

VALUE OF PERSIAN GULF PEARLS

228 439 The annual value of the Persian Gulf pearl fisheries is difficult to estimate exactly, as there are no published figures and the season's crop is not shipped out through any single port. Figures published by some authors are actually only the value of the pearls passing through Bahrein Island. However, as close to 90 percent of the Gulf pearls do pass through Bahrein, these figures give a rough estimate. The earliest figure known dates back to the early 19th century; Wilson stated in 1833 that the value of the pearls produced at Bahrein amounted to from £200,000 to £240,000, while the value of the whole fisheries was about

£300,000.[1] Wellsted stated that in 1835 the total value was 228
£400,000.[2] Zwemer stated that the value of pearls shipped from 439
Bahrein in 1896 was £303,941.[3]

Cox gives the value of pearls exported in 1925 as £220,000 from Bahrein and £9,000 from Lingeh in Iran, and for 1926 as £192,000 from Bahrein, £11,000 from Kuwait, and £5,200 from Lingeh (a total of about £208,000 for 1926); Cox further states that the true value was probably ten times these figures, for reasons he fails to clarify.[4] However, Thornburg has accepted this last statement of Cox's as a fact and has arrived at a figure of $10 million for the value of the Bahrein fisheries in 1926,[5] a figure that is unreasonably high. Thornburg estimates that in the years immediately following World War II the value of the Bahrein pearl fisheries was about $250,000; Kruegar states that in 1949 the value of the Bahrein pearl fisheries amounted to $200,000.[6] Rihani gives figures for the whole Gulf which amount to about $15 million,[7] the most absurd value published.

A summary of the more reliable figures would seem to be as follows:

1830's	$1,500,000
1835	2,000,000
1896	1,500,000
1925	1,200,000
1926	1,000,000
1946	250,000
1949	200,000

As can be seen from the above table, the value of the fisheries 228
dropped to only a fraction of its previous value after the world 439
depression of the thirties. It should also be pointed out that due to 435
world inflation the figure of $200,000 for 1949 represents less than $100,000 on 1926 monetary standards. However, while the depression dealt the Gulf pearl fisheries a devastating blow, its

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[1] D. Wilson, "Memorandum Respecting the Pearl Fisheries in the Persian Gulf," *Geographical Journal*, III (1883), p. 284.

[2] James R. Wellsted, *Travels in Arabia* (London, 1838), p. 264.

[3] Samuel M. Zwemer, *Cradle of Islam* (New York, 1900), p. 100.

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Kuwait MI1

SOME ASPECTS OF THE ARAB DHOW TRADE

Alan Villiers

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AT THE end of 1939, there were 106 large ocean-going dhows on the registry of the Persian Gulf port of Kuwait. They averaged about 100 tons, the largest being 300 and the smallest about 75 tons, by European standards. Their average value, at that time, was perhaps 10,000 rupees, the approximate equivalent of $3,000. They made trading voyages with Iraqi dates, loaded in the Basra river, to the coasts of India and East Africa, generally making either two Indian, or one East African, voyage annually. The majority were in the trade to India, with an occasional diversion to East Africa. From India they were accustomed to bring back shipbuilding materials, coir for cordage, and Malabar teak; from East Africa they brought mangrove poles from either the delta of the Rufiji River, in Tanganyika, or from the port of Lamu, in Kenya Colony. These poles were used for building, and the dimensions of the rooms in most of the Kuwait houses depended upon the length of the mangrove poles brought from East Africa.

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In addition to these deep-sea dhows, there were also, at that time, between 100 and 150 pearlers, and some 50 or 60 smaller dhows in the local trade to the Basra river, many of them engaged in bringing fresh water (for Kuwait has no satisfactory supply of its own). New vessels were building at the rate of two or three a month, for deep-sea, and a similar number for coastwise trade.

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The port of Kuwait was then, and is still, the principal dhow-

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▼ Alan Villiers, deep-sea sailor and author, spent over twelve months in 1938–39 studying firsthand the Arab dhow trade of the Persian Gulf and the coasts of southern Arabia and East Africa. His experiences are described in his *Sons of Sinbad*, published in 1940; Mr. Villiers here presents further information on the social and economic aspects of the trade.

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2

Kuwait MI 1

396 building and trading port of the Persian Gulf, though offering
439 little trade itself. Its only real rival in the deep-sea trade was the ancient port of Sur, near Ras al-Hadd, on the Gulf of Oman. Figures for the port of Sur were unobtainable, but there must have been at least 100 deep-sea dhows sailing from there, the majority to Mogadishu, Mombasa, and Zanzibar. Several ports on the Trucial Coast of Oman also sent their quota of deep-sea ships to Africa and India; and Muscat and Mutrah Bay, and the ports of Lingeh and Qishm, in Iran, contributed a few. But the flag of Iran was a rarity in both Indian and African ports, compared
K with the Arab.

MA In addition to the Persian Gulf and Omani ports, Mukalla in
396 the Hadhramaut, Ma'alla by Aden, Hodeida, Mocha, and
439 Luhaiya in the Yemen, and Qizan on the coast of Asir in the Red
464 Sea, all build and maintain considerable fleets of dhows. These I have seen, personally; there are many ports I was unable to visit. It is probable that the dhow trade round the Arab coasts employs upwards of 2,000 vessels of one sort or another, in which at least
K thirty or forty thousand men gain some sort of livelihood.

M.A. For many years, steamers of the British India Company have
439 been trading in the Persian Gulf. Kuwait is still well served by
505 steamers from Karachi, and an occasional long-voyage vessel used to put in from New York and London, even before the oil resources began to be exploited in 1940. American, German, Italian, and British lines, none of them likely to overlook any cargoes, all traded to the Gulf. The African East Coast and the Indian coasts are even better served. How is it, then, that a dhow trade of such
K importance still survives? How is it organized, and how managed?

MA One reason — perhaps the chief — why the ancient trade with
488 the monsoons down the Indian Ocean not only survives but flour-
437 ishes is that the dhows warehouse the goods they carry as well as
505 transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and

Kuwait MI 1

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his vessel pays practically no port dues. His dates can therefore 438
be warehoused in the dhow, until the market can easily absorb 439
them. 505

MA 439 443

The dhow trade is "native" trade, a stubborn plant which has been growing a long, long time. Nearly all the cargoes carried in dhows are for the native bazaars, and almost never for European account. Much of the cargoes consists of goods which the dhow captain himself, or some merchant or merchants travelling with him, sells for his own profit. The dhow is a peddler, as well as a carrier; a storehouse, as well as a ship; a means of livelihood to travelling merchants, as well as to her crew proper. Basra dates, though the most important outward cargo,[1] are only one source of revenue: there are a host of others, not necessarily always legitimate.

K MA [245] 456 471 784 466

Kuwaiti owners of date plantations on the nearby Basra river play a considerable part in the financing of deep-sea dhows, though in most cases the captains, called *nakhodas*, are at least the nominal owners. It suits the merchants well that the *nakhodas* should regard themselves as the owners, for this provides them with a cheap form of insurance. If the dhow be lost it is the *nakhoda's* loss, and not the merchant's, for the poor captain must pay back not only the value of the dhow but the advance of freight given him to finance his voyage. Since Islam forbids all forms of ordinary insurance, this arrangement is to the merchant's liking. The *nakhodas* must accept it, for in most cases there is no other way by which they can acquire a big dhow.

In Kuwait, immediately prior to the outbreak of World War II, there was beginning to be some restiveness about this, and an association of the *nakhodas* had the temerity to issue its demands upon the merchants. These included payment of demurrage when unduly delayed at the loading berths in Basra (a dhow might be kept for weeks waiting for her cargo), a sliding scale of freights for different ports instead of the customary flat rate of 1.5 or 2 rupees a package regardless of destination, liability for the return of advances to cease with the loss of the ship, two competent officers for every seagoing dhow, and so forth. The demands represente

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[1] Crew requirements and the very measurements of the dhows themselves are reckoned in terms of dates. A sailor to each 100 packages is the general rule, in Kuwait, and a dhow is spoken of there as having a capacity for 2,000 packages of dates, rather than as being of 100 tons burden.

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456 a bare minimun, surely, and no more than a *nakhoda's* right, but
471 the merchants' answer was that if the *nakhodas* could make new
784 rules, so also could they; and they had the real power. I do not
466 think the attempt of the *nakhodas* got them very far.

MA
443 While the dates are generally carried both to India and East Africa on a freight basis, nearly all other cargo is bought to the
505 ship's own account and peddled to best advantage. The mer-
439 chants have a substantial share in the dhow's earnings, apart from the sailor's own ventures, which are limited to what they can stow in a sea chest on the poop. As far as I was able to discover -- and I was more than twelve months sailing in deep-sea dhows -- the freight from the dates, on the typical African voyage, is used to finance a cargo of salt from Aden and to purchase odds and ends which might earn a profit in the bazaars of the Benadir coast and
MA Kenya Colony. At the same time, the dhow carries all the passen-
484 gers she can prevail upon to make a voyage, anywhere, for the Arab of Oman, and the Hadhramaut in particular, is an inveterate wanderer, and every dhow is a passenger vessel by the mere possession of deck enough to lie upon.

The salt is sold in the best market that offers between the Hadhramaut coast and Zanzibar. At the same time, the *nakhoda* does what trading he can in anything which he knows, from past experience, will command a market. The average dhow never leaves the Gulf without at least some carpets, allegedly Persian but generally of either Italian or English origin, which are used both as trade and as bribes. Cooking stones, ghee, live sheep, cows, sacks of rice and flour, dried fish, haberdashery of all sorts, brassware, cheap enamelware, Arab confectionery -- all these may be aboard, either as ship's ventures or as the crew's, generally the latter.

Every man of the crew concentrates on goods which can be bought cheaply in the free port of Aden, adulterated if possible in transit, and sold to the Somali or Swahili shopkeepers whose little stores abound in every port along the coast of East Africa, from Haifun in the north (which the Italians called Dante) to Mikindani in the south, which is about as far south as the Arabs sail in these days. Only Indian dhows go further, to Madagascar and the Comorin Islands. Gaily coloured turbans of the correct style

443 (for the manner of headdress worn in the different parts of Arabia
505 and East Africa varies considerably; what will sell well at
439 Mukalla, for instance, will find no buyers at Kuwait; and the Arab is a stickler for style), sarongs from Java and Japan, amber and artificial beads of the kind the true Moslem loves to fondle, cigarettes in gay packages but of no advertised brand, cheap perfumes (which I have several times seen the sailors laboriously adulterating with water from the ship's tanks), small crocheted caps to go under turbans, money belts, caps of artificial leather and pullovers of extremely artificial wool, veils for the harem, basketware from the Hadhramaut, sometimes a little hashish or *qat*[1] — these are the sailors' ventures, and the profits are their own.

The sailors are inveterate smugglers; almost none of the goods they bring — apart from the main cargo — is declared. ~~Since they~~ leave from small ports along the coast of Arabia where official supervision, while thorough, is not organized to conform with the Europeans' idea of how trade should be conducted, and since so much of their more highly dutiable goods are private ventures, such manifests as they produce to the authorities are useless. The mariner buys his goods himself, and sells them himself (though he does not mind disposing of them to boats alongside). He sees no point in accepting any official interference, and to him the European on the East African coast is still an interloper, recently arrived and wholly unnecessary.

505 The passenger trade is an important one, particularly in the
484 East African voyaging. Though the Italians in their colonies tried
486 to regulate the movement of Arabs, and the growth of Indian influence in Mombasa and Zanzibar has much lessened Arab trade and opportunities, still thousands of Omani and Hadhramaut Arabs travel down the Benadir coast and to Zanzibar annually. Every dhow fit to go to sea — and quite a few which look as if they are not — carries her quota, and some of the overcrowding is incredible. Among 35 Arab dhows which were lying together at Mogadishu, in Italian Somaliland, in the season of 1939, the Italian immigration authorities checked 4,000 passengers. They

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[1] A bush common to southern Arabia, especially the Yemen. The leaves, when chewed, are somewhat intoxicating.

000 also a pearl diver. Pearling from Kuwait and Bahrein is carried
K on during the season of the hard southwest monsoon in the Indian
MA Ocean, when the big dhows are laid up and there is no ocean
228 sailing. It is therefore possible for the same men to carry on both callings, though in these days the seaman is becoming a little too enlightened to go off cheerfully to the purgatory of pearling.

MA The seaman is also helped by his religion, by his interest in the
565 seafaring life (which has a great appeal of its own) and the fine
581 camaraderie about it, and in many cases by the delights of night
595 life in such ports as Zanzibar and Bombay. If he has no harem of his own back in Kuwait, he is certainly no celibate at Zanzibar. He generally seems to manage a small home in Kuwait after a few voyages, depending upon his own business acumen and the general success of the dhow he serves in. Many *nakhodas* appear to maintain several.

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505 In addition to the merchants, *nakhodas*, and seamen, there is
565 another class of importance in the dhow trade. These are the mates, the experienced officers who, never able to become *nakhodas* themselves because of an unacceptable financial status, very often have more to do with the actual sailing of the dhow than the *nakhoda*. Each big dhow carries at least one such experienced man. Sometimes he is of Iranian origin, and has been sailing since he could walk. Sometimes he is a Negro, member of a trusted ex-slave family, who lives with the *nakhoda* at home or has been brought up in his courtyard.

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505 He is always an able mariner, but he is not often trusted to
565 trade. It is not at all uncommon for a *nakhoda*, on the usual East
439 African voyage — which always begins with a long haul and long-winded peddling of dates round the coasts of Southern Arabia, and to Berbera and perhaps Djibouti — to leave the ship for considerable portions of the passage at sea, while he looks after her business interests ashore. For example, in one Kuwait dhow in which I had the good fortune to sail for some eight months, the *nakhoda* cheerfully left the ship at Aden and went on to Mukalla by steamer, to steal a march on the other shipmasters and scoop the cream — he hoped — from the passenger market. Again, he left the ship at Zanzibar, and his mate took her down to the delta of the Rufiji, hauled her out on the beach at Kwale Island south

of Dar es Salaam, loaded her with mangrove poles, and brought 505
her back to Zanzibar again, where the *nakhoda* had ostensibly 565
been trying to assemble passengers and extra cargo for the return 439
to Arabia but in fact had been enjoying a new harem.

Mates are paid by shares, and are, in my opinion, an oppressed 505
class. They carry their own ventures, engage in smuggling on a 565
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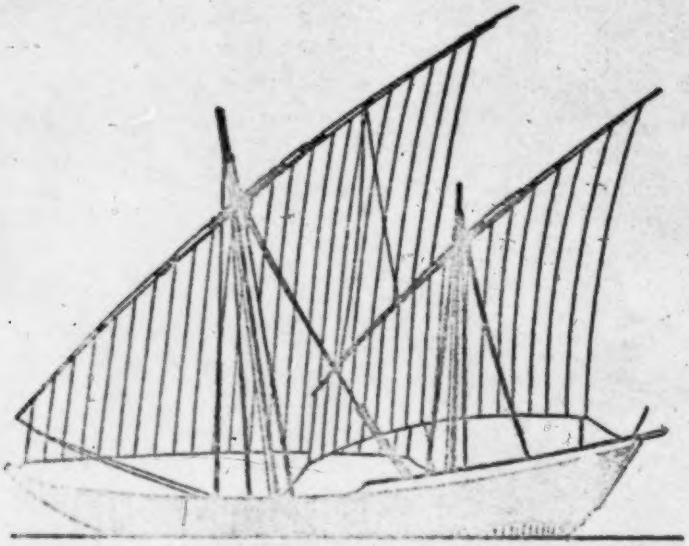

[501]

Baggala

small scale — haberdashery, currency, and so forth — and generally keep the ship's books. They may become *nakhodas* of small *booms*, running to the Basra river; but it is unusual for a man from the more dignified deep-sea trades to descend to this. There is no social status about the *nakhoda* of a coastwise water dhow.

Ships are built by shipwrights who employ no naval architects. 396
Both builders and riggers' lofts are unknown. The ships are put 501
together entirely by eye and take the traditional form either of [171]
the double-ended *boom*, or the carved and embellished *baggala*,
which obviously has a considerable ancestry from the Portuguese
galleon.

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2
Kuwait MI 1

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galleon. *Baggalas*, being both costly to build and unwieldy in a seaway, are now unfashionable. A *boom* is both cheaper and much easier to build, and carries just as much. Her sharp stern makes her safer in a seaway, though it is no part of her builder's plan that her *nakhodas* will try her qualities in a storm. Their sailing, he hopes, will be confined to sunny seas and more or less favorable winds; therefore the clumsy lateen rig will do.

K MA 501 505

The lateen is awkward but cheap; it demands a big crew, but these are cheap, too, for they are the sailmakers and riggers as well as mariners, and their only cost is an agreed share in the ship's earnings. The lateen is a grand pulling sail, and the dhows sail handsomely in their own conditions. There is nothing clumsy about them, though their fish-oiled hulls smell abominably and their underwater bodies are preserved by a mixture of tallow and lime, rubbed on by hand and renewed quarterly. The sailors do this work, as well as handle all the cargoes, keep the passengers in order and extol the merits of their ship so that more passengers might sail with her, tow the ship with her own longboat and propel the smaller dhows by sweeps, in calms, and fight for her if need be. The Kuwait dhows today are never armed, though the Suri may be.

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K MA 505 501 439

A brief description of my personal experiences will serve to illustrate a typical East African voyage.[2] I sailed in a Kuwait dhow of the *boom* type, a vessel of 2,000 date-packages capacity — perhaps 150 tons — which had a crew of twenty-eight. She carried something between 120 and 180 passengers, although her hold was full of salt and rice, and her decks were already crowded with a large longboat, a small gig, and a dhow under construction for sale at Lamu.

K MA 439 505

I joined the vessel at Ma'alla, the native port of Aden. She had already been several months at sea, peddling a full cargo of dates from Fao (by the mouth of the Basra river) around the coast of the Hadhramaut, and to Berbera. When I joined her, she had been hauled out on the beach at Ma'alla and her bottom

K MA 113

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[2] The voyage here summarized is described in detail in the author's *Sons of Sinbad* (New York, 1940).

Kuwait MI 1

repayed, and already was loaded with her cargo of salt and rice in sacks, and some mysterious parcels on deck for the Sultan of Mukalla. All her crew had their sea chests filled with trade goods from the cheap *suq* in the Crater at Aden; her carpenter was at work on a 40-foot dhow for sale on the voyage; and she had shipped several Suri and Omani merchants, from Aden, bound on a general trading voyage on their own account, wherever the dhow might take them.

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We sailed first to Mukalla and Shihr, where we embarked passengers (the fare was eight rupees regardless of destination, the passengers providing their own food and looking after themselves entirely) and some further cargo. This consisted mainly of a parcel of condemned dates which it was hoped to sell to the Somali (or failing that, to feed to the Swahili labor in the Rufiji Delta, when loading mangrove poles), some dried shark which smelled high even aboard the dhow, some cooking stones, and a considerable quantity of basketware.

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With this lot aboard, and the *nakhoda* pessimistic and depressed at the small number of passengers, though his dhow appeared crowded, we sailed first to Haifun, a salt port on the northeastern coast of Italian Somaliland. There we anchored among a fleet of dhows, and did nothing at all for some time. Finally, some rice was sold, some haberdashery smuggled into boats which the local Somali brought alongside, and lot of fish caught and dried. Then we went on to Mogadishu, running down the coast with the northeast monsoon. At Haifun another Kuwait ship was caught smuggling and heavily fined; and all the Kuwaiti in the harbour contributed to pay the fine. At Mogadishu, it was hoped to land a hundred or so passengers, but the Italians would not permit them to disembark. Trade there was extremely difficult, and little could be done. Some of the merchants left, as far as I could gather, to try to collect debts owing to them from previous voyages. Some smuggling went on (I saw a lovely carpet change hands), some of our passengers melted away and their places were taken by others, equally undocumented.

After a week or ten days we passed on down the coast to Lamu. Here more passengers landed and there was a determined attempt to sell the new dhow which the carpenter had completed. She

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K was a lovely little vessel which could carry some fifteen tons. The
MA price asked was 1,000 East African shillings, or about $240. At that price,
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•439 there was no buyer; she finally changed hands at 700 shillings. Lamu was
435 a mangrove-pole port, but I gathered the trade was rather too well regulated for our nakhoda's taste, and we bought nothing.

K Next came Mombasa, a port with a large dhow trade. Some figures I
MA saw in the Report of the General Manager on the Administration of the
439 Railways and Harbours (Kenya and Uganda) showed that the dhow trade
505 was increasing, rather than diminishing. The latest returns I say, for the year ended December 31, 1937, showed that 1,427 dhows had arrived at Mombasa, an increase of ten percent on the previous year. These 1,427 dhows were computed to register -- if they had been registered -- nearly 40,000 tons. Many were Swahili, from Lamu and Zanzibar, but a large proportion was Arab. There was a native harbor set aside for them, and here we sold salt, landing it in our own longboat.
K We got rid of our surviving passengers, gave feasts to merchants and
MA officials of the native harbor (these were a great feature of the voyage,
[579] and were always accompanied by much monotonous singing and dancing), gathered tidings from brother nakhodas from Kuwait and Sur about trade prospects further south, collected debts, and finally departed toward Zanzibar.

K There were three Indian and one Iranian deep-sea dhows in the port at
MA Mombasa. The Iranian was an enormous vessel of over 400 tons -- the
501 largest dhow I saw anywhere. She was a boom and had been built at
396 Kuwait, but the Kuwaiti sold her because they found such large vessels
439 uneconomic, in bad times, for the mere reason of their two great capacity. They brought too much to sell, when the market was depressed, and they could not wait indenfinitely to dispose of their cargoes because their overhead was too high, despite the fact that everything possible was done to keep down building costs, even to the sending of Kuwaiti shipwrights to the Malabar coast to build big vessels there, rather than carry the timber to Kuwait.

K Zanzibar, at that season of the year, was an even busier Arab
MA port than Mombasa. In the first month of the northeast season,
439 over a hundred ocean-going dhows had arrived at Zanzibar, most

Kuwait MI1
Zanzibar FM1

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of them Arab. I noticed in the registry office of the Customs building that some were entered as Somali, and a few were registered in the Hadhramaut. No longer did they bring down picturesque cargoes of myrrh and frankincense (if they ever did) or ship out slaves and ivory, ambergris and hippopotamus teeth. They brought salt and dried fish; and when they came, the quantities of hashish and other drugs in the town showed a significant increase. They loaded little at Zanzibar for the homeward voyage, but went on down to the coast of Tanganyika.

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We completed the discharge of our outward goods at Zanzibar, and the crew busied itself for weeks selling Hadhramaut basketware and Aden haberdashery — port of origin, Yokohama. When we sailed, leaving our *nakhoda* behind, our only cargo was the parcel of condemned dates, which the Somali would not have. We passed on down to the delta of the Rufiji River, a place given up to mosquitoes, malignant malaria fever, monkeys, sad Swahili, rain, and the best mangrove poles in the world. Here we lay six weeks, while a cargo of some 142 score of poles was laboriously cut and loaded. For this work, Swahili were engaged to help our crew, and at last the bad dates found consumers. The mangrove poles were ferried out in the dhow's longboat, and paid for in silver shillings to a white supervisor. There were some twenty dhows loading in the Rufiji delta at the time, all for the Persian Gulf.

It struck me as strange that the dhow should spend so much time embarking a cargo in which the total investment was less than $500, for no matter how I tried to figure things out, I did not see how it could possibly be worth her while to haul such a paltry cargo so long a distance, or how she could make enough from it to show a reasonable profit on the voyage. There was certainly something mysterious about this mangrove pole business, and the white supervisor, energetic as he was, by no means knew all that went on. I noticed later, when we sold our cargo to King Ibn Saud's agents at Bahrein for use in a new palace at Riyadh, that the Arab receipt was for 295 score, and the price paid, over 4,000 rupees, approximated $1,200.

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There was some attempt in Zanzibar to regulate the dhow traffic, and precautions were taken to see that there was no slaving, under any guise. A local act requires that evidence be shown

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Zanzibar FM1

that any new crew members in Arab ships joined voluntarily; MA
vessels must not be overmanned, and crew and passenger lists 505
must be provided and in order; ships must be surveyed, and kept 567
seaworthy; and *nakhodas* must be certificated. As for the last, the Z
port officials conduct examinations, and the general principle 656
seems to be that if a man is capable enough to bring a dhow down to Zanzibar, certificate or no certificate, he can also be trusted to sail her away again. But the fee for examination is fifteen shillings, and the Arabs complain about it.

We touched at Zanzibar again after loading in the Rufiji, re- K
embarked our *nakhoda* and took aboard a few Swahili school- MA
teachers as passengers (they proposed to hire an automobile at 439
Kuwait to take them to Mecca), filled the decks with coconuts 505
and cases of soap and vermicelli, and departed toward the Persian Gulf again with the first of the broken weather at the end of the northeast season. We did not await the coming of the true southwest monsoons, for it sets in hard; we sailed direct to Muscat, in twenty-six days.

Muscat was depressed and there was no trade there, not even smuggling. All that changed hands, as far as I could see, was a box of Maria Theresa thalers, enormous Austrian coins minted in London for the Omani and available in Zanzibar at a price less than the exchange rate in Muscat. The Arabs turned everything
to profit and were prepared to sell anything, even the ship[illegible] K
sailors' pastime in the Rufiji was buying lemons — a thousand M.A
for a shilling — and converting them into sherbet, which they 252
hawked in the *suq* at Kuwait throughout the summer.

Our cargo of mangrove poles sold at Bahrein, the ship returned to Kuwait, to lay up inside a coral breakwater until the new sea-
son's Iraqi dates ripened and it was time to go out again. At K
Kuwait, when all her people were returned — several relations of MA
the *nakhoda* had dispersed from Zanzibar back to Lamu and 451
Mogadishu to collect debts — a general balance sheet of the 465
whole round voyage was struck, the profits computed carefully, 439
and divided by a system of shares arranged traditionally. It was 505
not a straightforward statement of income and expenditure; I never saw or heard of any piece of Arab seafaring business which was as simple as that. It was all complicated by prior advances,

K MA debts, odd earnings not shared and even [illegible]der earnings which
451 were shared, and mysterious complicated procedures, some of
465 which I never did fathom, for the war came, and stopped my
439 investigations.
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The son of the merchant family which owned our dhow, however, told me that her gross profit on the nine-month round voyage was 11,000 rupees, not including the proceeds of the crews' and officers' private ventures. But I think he exaggerated, for the total investment in the dhow was little more than that. But at any rate, the dhow's people were well satisfied and they all,
K save one, went back to sea with her. The *nakhoda* grew fat
MA throughout the summer, and took a new wife, and a new *boom*
(595) for his brother at a cost of 10,500 rupees; and I heard no complaints from the merchants.

K As far as I was able to discover, half the gross earnings went to
MA the ship; this was the merchant's share. The cost of the food for
505 the round voyage (which was not much, for all hands lived very
465 simply and fishing lines were the most important equipment in
501 what passed for her storeroom) was deducted from the other half,
439 and the remainder was then divided by shares arranged strictly in accordance with the accepted value of each man's rating aboard. The sailor's share on the voyage which I made was reported to be 135 rupees (about $40), whereof 35 rupees had been advanced. This was little enough for such a long voyage, and though they worked hard at all sorts of things and were ready for any kind of business, I doubt whether a sailor's earnings from other sources amounted to more than 20 or 30 rupees, clear.

K I heard of dhows from Kuwait that season which were dis-
MA tributing less than 100 rupees; according to the Kuwaiti, who
465 had no high opinion of them, the Suri rarely paid out more than
505 fifty. To a sailor whose only home was the sand of the *suq* and
181 his bed the cloak around him, whose wants were few and whose paradise was assured, even 50 rupees may be a vast sum of money. There was, at any rate, contentment throughout the Arab shipping industry as I knew it, and the quiet philosophy I learned among the simple seamen was of great help to me in the days of the long-drawn war which was soon to follow.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 Pearl divers suffer from a variety of diseases, most of which can be
752 directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 Divers never eat while they are working. When the day's diving is
461 finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an
312 abundance of fresh water into the water tanks of the dhows much faster
502 than it can be transferred by waterskins. The larger vessels anchor for the
438 night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 Pearls are sometimes bought on the pearl banks by brokers who travel
442 around in their own boats trying to get the best pearls before other brokers
439 hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they
all end up in Bombay

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

228 all end up in Bombay. The Indians drill, polish, and grade the pearls, and
442 string them on silk; these short strands are known as "Bombay bunches."
•439 Before World War II the pearls were sent to India by streamer; today they
509 are usually sent by air from Bahrein, Kuweit, Sharjah, and Dharan. The
pearls are usually sold to Indian merchants in these towns, but occasionally the Arabs themselves take the pearls to Bombay.

After all the pearls have been sold, the nakhoda figures out the season's
228 profit. The owner of the dhows gets half the profit; the other half is divided
465 among the crew. Most of the pearling dhows out of Saudi Arabian ports are small (not more than 40 feet), with crews of ten -- six divers and four attendants -- in addition to the nakhoda. Each diver and each attendant gets one share in the profits (about 4 per cent); the nakhoda gets two shares, unless he owns the dhow and longboat, in which case, of course, he gets more than half the profit. The number of shares each of the crew, the nakhoda, and the owner get is agreed on at the beginning of the season and may vary from place to place. Many of the pearling dhows out of Kuweit and Bahrein are considerably larger than those out of the Saudi Arabian ports and may have crews of forty or more; on these the nakhoda gets a larger number of shares.

Pearling is a gamble for everyone concerned, from the merchants to the divers. Some seasons are good, some bad; sometimes a boat has bad luck, sometimes excellent luck. A share on a pearling dhow should be worth several hundred rupees, but it may not be worth fifty.

Usually a share on a pearling dhow represents a year's wages, since the
228 pearling industry operates under the "debt system" mentioned above (not
426 to be confused with the "truck system" of pearl fisheries elsewhere, in which the divers are paid off in produce). Under the debt system the divers and attendants are given cash advances during the winter season, when they are not working, and their families are given food and supplies while the season is on. The advances are deducted from their calculated shares, so that usually the worker gets little or nothing.

Thus the divers and attendants are perpetually in debt. Once a worker is in debt to a nakhoda, he cannot work for anyone else during the pearling season; this is one of the laws of the industry. He has virtually sold himself into economic slavery to the nakhoda, who has his services and never actually has to pay him anything, whereas he in effect pays the nakhoda in the pearls he produces. However, it should be remembered that the nakhoda is in turn usually in debt to some merchant, who commonly finances numerous nakhodas.

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505 However, a century before this, Kuwait was apparently noted more for its pearl fisheries (which are still important) than for its maritime trade, as Niebuhr related that in 1763

> Kuwait is a sea-port town. . . . The inhabitants live by the fishery of pearls and of fishes. They are said to employ in this species of naval industry more than 800 boats. In the favorable season of the year, this town is left almost desolate, everybody going out either to the fishing, or upon some trading adventure.[6]

In Niebuhr's time, in the eighteenth century, the Omani sailors from Muscat and Sur on the Gulf of Oman were the famed Arab mariners, for Niebuhr related that

> The inhabitants of Oman, although not fond of sea-fights, are nevertheless the best mariners in all Arabia. They have several good harbours, and employ many small vessels in the navigation between Jidda and Basra. To this last town there come annually fifty such vessels.[7]

In the middle of the last century Muscat was still an important maritime port, for in 1854 Osgood related that

> Several ports in the Persian Gulf are tributary to it, and some excellent ships and a large number of [*baghlas*] employed in coasting and foreign trade, are owned by the Banian merchants at Muscat. In fact more than half of the trade of the Persian Gulf is carried on in ships owned at Muscat. . . . The trade with America, which is carried on chiefly by vessels from Salem does not exceed thirty-five or forty thousand dollars annually. Dates and cash are usually taken in exchange for American merchandize.[8] [439]

In the present day Muscat has completely fallen from its former prized position and given way to Kuwait and Bahrein Island in the Persian Gulf. However, the port of Sur in Oman still carries on the maritime tradition of the Omanis and maintains a considerable fleet of dhows which have long been prominent in the trading along the African coast.

501 The craft that make the trip down the African coast from Arabia are by no means all large ocean-going vessels; craft of all sizes and descriptions come into Zanzibar. Villiers[9] tells of seeing a 30-foot *jalbhut* from Oman sailing down the African coast. Having owned and sailed a *jalbhut* of about the same size in the relatively calm Persian Gulf waters, I have nothing but the utmost respect for anyone with the nerve to sail such a small open boat several thousand miles in the potentially rougher Indian Ocean.

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[6] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 127.

[7] Ibid., 122.

[8] Osgood, *Notes of Travel* (Salem, 1854), p. 81.

[9] A. Villiers, *SS*, p. 190.

waters from May to September, and why most local Indian craft are 505
drawn up on the beaches. 132

II

Dates are probably as important a factor as the monsoons in maintaining 439 the large lateen fleet in the waters of the Indian Ocean. By a lucky co- 505 incidence, the great date crop of Iraq begins to ripen just before the northeast monsoon sets in about October. The great maritime expansion of the port of Kuwait has probably been due in no small part to its proximity to Basra, the port through which most of Iraq's dates go.

Dhows come to Basra for dates from Kuwait, Bahrein, Persia, Oman, India, and even as far away as the Hadhramaut. Starting in the latter part of August and continuing into September, Kuwait deepwater ships are floated from the beaches, where they have rested for several months during the summer, making ready for the run to Basra to pick up dates. The farther the home port is from Basra, the earlier the ships must depart, so that craft from the Hadhramaut must allow a month or more to get to Basra, riding up to the Gulf of Oman on the summer monsoon and then working their way up the Persian Gulf, where the monsoon is not felt.

Almost without exception the date cargo is carried out of Basra on consignment for some merchant; sometimes the destination is known on leaving Basra, but often the consignment is sent to Aden or Mukalla (see Plate 23—bottom) in South Arabia for final shipping instructions from the Arab or Indian export firm shipping the dates. Dates are usually not carried into the Red Sea much past Hodeida in the Yemen in Kuwait ships, although Villiers[14] tells of a Kuwait *bhum* transporting a load of dates as far as Qizan in Saudi Arabia.

In such a manner dates have been leaving Iraq for decades bound for the southern shores—that is until the winter of 1949. In that winter, for the first time in many years, the great date-bearing Kuwait *bhum* fleet failed to appear in its usual strength in the waters along the southern shores of Arabia; only a portion of the usual quota appeared in Aden by the first of 1950. The dates that would ordinarily have come into Aden in Kuwait dhows came down unceremoniously under steam. What caused this abrupt change in the well-established status quo of the dhow trade? The same thing that has wrought so many other radical changes in the economy of the Middle East lately—oil!

Kuwait is actually a city-state with few industries except pearling, fish- 361
ing, and shipbuilding; there are no farms, no date plantations, and only 465

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[14] A. Villiers, *SS*, p. 366.

361 465 a few scattered Bedouin tribes. The Kuwait Oil Company is now operating in high gear, and has apparently offered so many opportunities for natives that *nakhodas* (captains) have difficulty in getting men to sail their ships at the wages they can offer. Sailors never get any regular wages on a dhow, receiving a share of the earnings of the ship only after the voyage is over. Many sailors have apparently found that it is a comfortable feeling to receive a regular wage every week! It is too early yet to tell whether or not the change is permanent.

● 439 505 There has also been a noticeable fall-off in date-bearing Arab dhows sailing to India, but apparently for a different reason. Vaidya[15] states that during the 1943-1944 season, presumably for the first time, sixty to seventy per cent of the Arab fleet that usually brought dates failed to appear because of Arab restrictions on the export of wet dates and because of the high prevailing prices of the dates. Thus, this case is not allied to the present situation prevailing in Kuwait, as during the 1943-1944 season dates presumably were not shipped to India by any other means.

However, even if Kuwait is unable to put its *bhums* to sea, the date crop in the future will still probably be carried out of the Persian Gulf in dhows as usual; it will take time to attain a balance again. Whether the port of Sur rises to the challenge or whether some Persian port takes the trade remains to be seen. The Suris from Oman are logical successors to Kuwait, for in times past they have been noted for taking cargoes at lower rates than the Kuwaiti or any other mariners could afford to, and they have a long maritime history.

It is interesting to note that oil activities in other areas in the Persian Gulf have drastically affected the marine activities of other coastal towns. Over ten years ago, the Saudi Arabian ports of Jubail, Qatīf, and Darin used to send out over a hundred dhows yearly to join the Persian Gulf pearl fisheries. Now if they send out several dozen dhows it is news; the Arabs who used to dive for pearls now have steady jobs with the Arabian American Oil Company. The same has happened on Bahrein Island. The Bahrein *nakhodas* are no longer able to find a multitude of divers who will accept the wage the *nakhodas* are able to offer; thus the Bahrein pearl fleet is only a shadow of what it was a quarter of a century ago.

439 226 Most but not all Arab dhows load dates first; however, many Omani dhows bring cargoes of dried fish and fish oil, for fishing is particularly good in the waters off Oman, and sharks and large tuna are caught in considerable amounts, both for home consumption and export. Sometimes, however, the Omanis may set out for Africa empty, or with only a partial

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[15] K. B. Vaidya, op. cit., p. 207.

cargo of fish if the local supply is not sufficient, and fish their way down 439
the Arabian and African coast, selling fish wherever they can. Then they 226
do the same thing on the way back. Mukalla is a favorite stopping place on the way down to Africa; I have seen dozens of *bedans* from Sur come into Mukalla and lay out their catch of shark or tuna on the beach to dry while they beached their dhows and put a coat of shark liver oil on their hulls (see Plate 18—top and bottom). Shark is a favorite Arab food; the [262]
flesh is cut off in strips or slabs and dried, while the liver is saved for its oil. The Arabs have little use for the tails or fins of the shark, but they are all meticulously saved and eventually find their way to China via India.

Thus these fish-bearing dhows from Oman start their trading venture from their home port, carrying a product of the port, and never carry other cargo; they trade fish from Sur to Zanzibar and back. For this trade [501]
they apparently always use the primitive *bedan*, usually ranging from fifty to sixty feet in length. The Suris export dates from Oman, or go to Basra for a cargo; when carrying dates they use large *sambuks* and *baghlas*.

In contrast to Arab and Persian ships which sail along the coasts the 439
whole way, whether going to India or Africa, Indian vessels usually sail 487
straight from India across the ocean for South Arabia or Africa with consignments of goods from Indian exporters at specific ports. Only rarely do they carry dates; their usual cargo consists of the products of India. From the Malabar coast they may carry coir rope stuffs, coir matting, teakwood, teak dugout canoes, coconuts, spices, cement, bricks, or tiles, while from Bombay they may pick up cotton piecegoods, groundnut oil, or tea. Most of the Indian ships that voyage to Arabia or Africa come from the Gulf of Cutch; few if any craft from Bombay or the Malabar coast carry this trade today.

In vivid contrast to the Arab date cargo and Indian cargo, which is usually on consignment, the replacement cargo for the rest of the voyage for the average Arab dhow is purchased by the *nakhoda* from the profit made on the date freight, for sale at the best market. After its date cargo has been discharged, the dhow becomes a trader in every connotation of the word, picking up and selling cargoes as she coasts south along the South Arabian and East African coast.

Sometimes the *nakhoda* may pick up a small cargo of partially spoiled dates to unload on the Africans; these the crew may wrap meticulously in fancy wrappers. At Aden the dhow may take on salt, sugar (from Java), rice (from Rangoon), canned goods, hardware, kerosene, or cotton goods and prints, and from the Hadhramaut coast the cargo may be dried shark

439 487 or other dried fish, *ghee* (clarified butter), honey, tobacco, grinding stones, and straw work (fans, mats, and baskets). It must be remembered that most of the cargo moving around the Middle Eastern waters in small vessels, whether dhows or small coastal steamers, is for the native trade and is destined for native bazaars, which are noted for the cheapness and poor quality of their wares. Once the dhow is loaded it is ready for the trip down the East African coast; however, the Arabs sometimes take a month or more to collect a full cargo.

Upon the *nakhoda* of the dhow rests the responsibility of getting another cargo for continuing down the African coast once the consigned date cargo is discharged. Invariably the *nakhoda* is the nominal owner of his dhow, so he acts as his own agent. As the cargo loaded after the dates are discharged is not on consignment, its selection is a matter of the *nakhoda's* judgment, with an eye to what will sell best in the African markets. However, a cargo that must be regarded as essentially on consignment is that of passengers. On some Africa-bound dhows passengers comprise a considerable portion of the cargo. The competition for passengers is very brisk, so that there is sometimes a race among the various *nakhodas,* who hasten to neighboring ports via motor launch as soon as their ships reach South Arabia to discharge their dates.

167 505 Through the dhows there is a constant flow of Arabs from South Arabia and Oman and of Indians from India. The immigrants usually become porters, hawkers, musicians, or beggars, but if they are very industrious, they may end up owning a small shop in the *suq*. Their usual aim in migrating is to work long enough so that they can go home after they save a little money; usually they never make enough to get out. Villiers[16] states that the Italian officials in Mogadiscio checked four thousand passengers on thirty-five dhows that were in the harbor when he was there in 1939. In 1937 the fare along the Hadhramaut coast between ports was three rupees.[17] In 1939 the fare from South Arabia to any African port was only eight rupees for men and twelve for women.[18] In Aden in 1950 the fare for natives traveling as deck passengers on A. Besse and Company dhows with no accommodations was 15 rupees to Berbera, Djibouti, and other ports about 150 miles from Aden; thirty rupees to Massaua, Mukalla, and ports about 450 miles away; and one hundred rupees to Jidda, Port Sudan, or ports approximately one thousand miles from Aden. These were fixed rates on the dhows operated by Besse; other dhows that

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[16] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal,* II (1948), 404.

[17] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 313.

[18] A. Villiers, *SS*, p. 78.

were trading down the coast could easily afford to undercut these rates. 167

As was mentioned above, women are usually charged higher rates for travel on dhows; this is because they have to be segregated and usually manage to make trouble, unintentional as it may be. Villiers[19] gives a graphic description of the nuisance a group of women can cause on an Arab dhow. For centuries women have apparently been creating disturbances on Arab dhows, for Niebuhr, who traveled down the Red Sea on a dhow in 1763, relates that

> In our passage, we found ourselves in danger of a worse misfortune than shipwreck. The females, who were lodged under us, more than once suffered linen, which they were drying, to catch fire, in consequence of which the vessel must have been burnt, if we had not been alarmed by their screams. . . . Those women were indeed extremely troublesome and indiscreet.[20]

Besides the ship's cargo, every member of the crew usually lays in a 439 store of goods that he personally peddles. Each sailor is allowed a sea chest 505 (see Plate 22—bottom), which he fills with print goods, turbans, flashlights, razors, sarongs, cigarettes, and perfumes which are later diluted. The *nakhoda* usually has some rugs or carved wooden chests to peddle (see Plate 17—bottom). Virtually none of this material enters Africa legally, but is for the most part smuggled in. Most of these trivial goods are carried in by the Arabs personally. Villiers[21] relates that he saw one man wear three gowns and eight sarongs, then wrap more sarongs around his knees, and make six trips through customs a day. Sometimes they are detected and stripped, but that is part of the risk. Often the Africans come out in canoes at night and remove the goods in small quantities. Frequently Arabs travel down the African coast on dhows as professional smugglers, living only for the smuggling they can accomplish. This sort of trading has been going on for centuries, for Paris[22] related that '. . . leur navires sont de vraies caravanes dans laquelles tous les matelots ont un intérêt.'

For the Arabs and the Persians, the trip down the African coast is leisurely and slow. It is not unusual for a dhow to stay in a port for three or four weeks haggling over a cargo, only to leave without having transacted any business. There is no rush, simply because there would be a long wait for the southwest monsoon to set in and carry them back north, if

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[19] Ibid., p. 78 ff.

[20] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 219. 113

[21] A. Villiers, *SS*, p. 143.

[22] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra-Européens* (Paris, Bertrand, [1841]), p. 9. '. . . their ships are true caravans in which every sailor has an interest.'

439 they completed their trip down the African coast to Zanzibar too quickly.

505 Once the trading voyage down the African coast to Zanzibar is completed, Arab and Persian craft usually load a cargo of mangrove poles for shipment back to Arabia, unless they have the rare luck of getting cargo
[342 go on northern consignment. For centuries mangrove poles from Africa
314] have been used in the construction of houses in Arabia, where there is an extreme shortage of wood of any kind. Indian dhows never load mangrove poles since there is an abundance of wood in India. Mangrove trees are plentiful along the East African coast in swamps at certain river mouths; most poles come from the Rufiji Delta, a little south of Zanzibar, and from Lamu, north of Zanzibar. The poles are cut by the dhow crews, with the aid of Swahili cutters recruited for the purpose.

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314 Alan Villiers[22] spent a month in the Rufiji Delta with a Kuwait crew obtaining a cargo of mangrove poles and has given us a most vivid description of pole-gathering activities. In the Rufiji Delta the mangrove trees grow in the soft, muddy delta, so that the cutters must wade in mud and water all day long. The branches are stripped with small axes and the poles loaded into small dugout canoes and brought to collection points where they are graded and stamped by government inspectors. Frequent and sometimes constant rain and savage mosquitos make a pole-gathering trip in the Rufiji Delta a suffering hell!

The Arabs have to pay the firm holding the pole-concession on the swamp for the poles, but in true Arab fashion they manage to load considerably more poles than they pay for. There is a well-organized pole-stealing racket, with everyone in on it, from the cutters to checkers and inspectors, with the exception of the head government forestry inspector. As the prevailing market price for mangrove poles in Arabia is about the same as the list price in Africa, the Arabs could not make any profit if they did not manage to load some extra poles.

439 In addition to mangrove poles, the Arabs may load cocoanuts, cloves, cocoanut oil, soap, or vermicelli. A private venture of the crew for the return trip from Zanzibar may be in lemons. Around Zanzibar lemons can be bought by the canoe-load for several rupees. The crew can squeeze the lemons and bottle the juice in bottles they have acquired along the way, using a pinch of salt as a preservative. The juice is sold at a nice profit in northern ports, where it is diluted for making sherbet.

In making the trip home on the southwest monsoon the Arabs waste little time, for the sooner they can get back, the more time they have for other activities before it is time to ship out again. Dhows from Oman

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[22] A. Villiers, 55, pp. 237-261.

usually try to sell their mangrove poles along the South Arabian coast. 439
If they do not sell their poles by the time they get to Oman, they simply put them on the beach and wait until next season. Knowing that the Omanis flood South Arabian ports with poles, the Bahreinis, Kuwaitis, and Persians sail straight for the Persian Gulf and its more profitable markets. Likewise, the Omanis, realizing that the Persian Gulf markets are flooded in the early summer, wait until late summer if they have to sell their poles in the Persian Gulf. Sometimes dhows from Oman carry firewood or fish oil in addition to mangrove poles if they go north to Basra for dates.

If a vessel sells its cargo of mangrove poles a considerable distance from her home port, it may load coral rock as ballast if it is available; this may be sold in Kuwait and ports in eastern Arabia. The coral rock is pried off the sea bottom and is a common commodity for construction [316]
purposes in a land where building rock is almost as scarce as wood on the sterile sandy coast.

As we have seen above, Persian and Arab ships make two trips to India during a season, usually carrying dates on consignment, but sometimes they carry dried fish, dried fruit, palm leaf mats, and coffee from the Persian Gulf and Arabia. After they have unloaded, they pick up a cargo of the products of India for sale in their native waters. These products consist mainly of teakwood timber, teak dugout canoes, coir roping stuff, coir matting, bamboo, cotton-goods, cocoanuts, chests, chairs, spices, and tea. Cement and tiles are occasionally loaded, but bricks (a very common product of the Malabar coast) are rarely loaded, as they are manufactured in Iraq and shipped out of Basra. Virtually all the teakwood for dhow construction comes from India, and Indian teak dugout canoes have been spread up and down the shores of the Indian Ocean, the Persian Gulf, and the Red Sea by dhows.

The *Periplus of the Erythraean Sea* tells of ships coasting on the African coast and trading cargoes as they went two thousand years ago. But cargoes have changed considerably from those ancient times when alabaster, myrrh, and frankincense were exported from South Arabia and tortoise shell, hippopotamus teeth, cinnamon, and slaves were exported from East Africa.

By 1800, slaves had become the chief cargo out of East Africa, with 567
Zanzibar as the center; however, with European intrusion into the waters of the Indian Ocean, eventually the British more or less successfully stopped the slave trade, which was in large part carried on by the Omanis. It has been estimated that by 1873 there were thirty thousand slaves ex-

forbidding traffic in adult women;[26] in 1948 these same two countries 567 failed to file reports on efforts to suppress traffic in women, children, and obscene publications.[27]

Slaving is difficult to stamp out, as the African victims are led to believe that their social status will be bettered. Actually, there is some truth in this, for an African, even as a slave, has a far better life in Arabia, since the Arabs treat their slaves fairly.

British regulations at Zanzibar provide that dhows must carry crew members voluntarily signed on and not in excess of that needed to sail the ship.[28] At Mombasa, *British Regulations for Native Vessels* provides that no man may be signed on as a seaman without satisfying the officials that he has voluntarily shipped, and further that no passengers are to be shipped without the knowledge of the authorities.[29] However, Villiers[30] relates that an Omani *sambuk* intentionally ran down a fishing canoe off Africa and 'saved' two Africans to be sold later as slaves in Arabia.

In essentially the same category as the slave is any other illegal or illicit 439 trade. During World War I gun-running was at a high, but now the trade is not very prosperous. There is considerable cargo smuggled to avoid duties; tea and other goods are run to Persia by the Arabs on the Trucial Coast of Oman—the old Pirate Coast.

The customs and immigration officials in Africa do not have much use 486 for the Arab deepwaterman, with his Arab passengers and smuggling crew. On the other hand, the Arab takes delight in deception, and attempts to confuse the European as much as possible. No large dhow ever [505] carries a visible name; its papers usually contain an official name, but more often the dhow is known by the name of the *nakhoda*, who is usually the nominal owner.

As soon as an Arab dhow reaches an African port, the local officials try to get a passenger and crew list; in this they never succeed, as certain of the passengers always vanish into the native anchorage as soon as the anchor is down, to return after the survey is made. This is easy, as all the native craft are herded into a separated anchorage and often new arrivals have to drive into small spaces in the middle of the anchorage.

Few carry passports or other identification, so actual identification is

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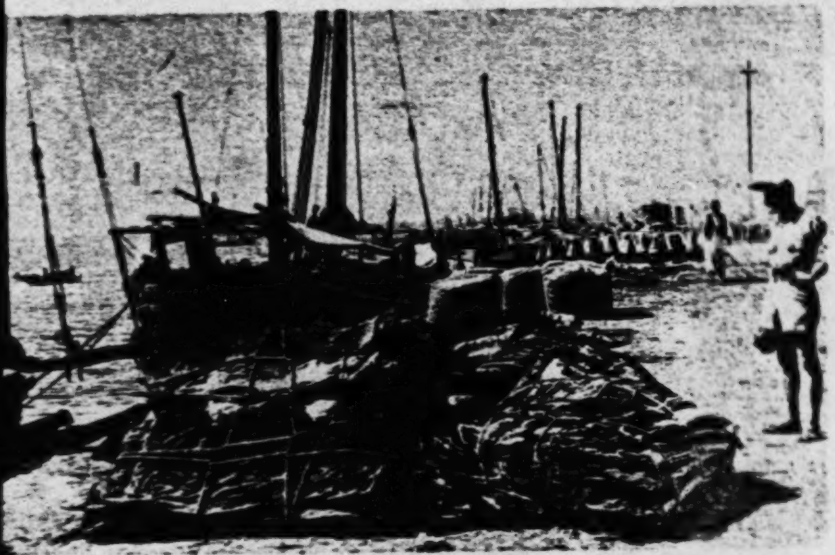
[26] J. L. Carver, 'Slavery's Last Stronghold,' *United Nations World*, II, No. 5 (June, 1948), 24-27. 113

[27] However, in all fairness it should be pointed out that the USSR, Afghanistan, Byelorussia, Honduras, Iceland, and Norway also failed to make reports on the grounds that the problem has not arisen in their countries.

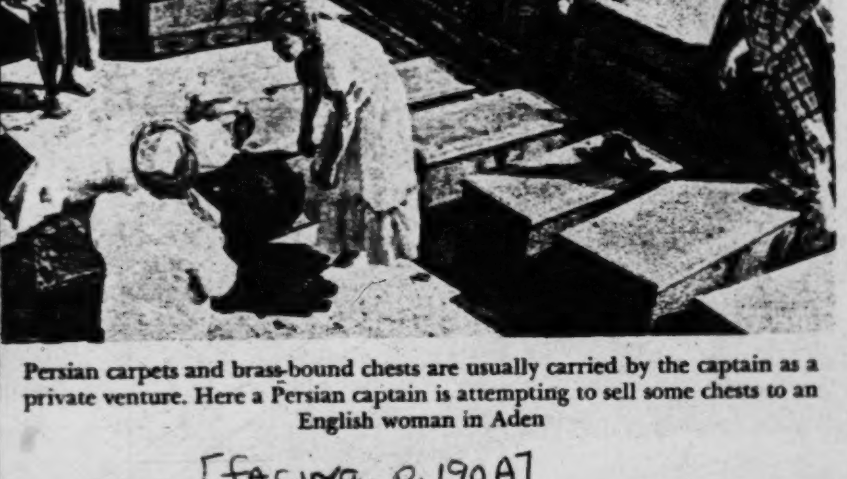
[28] A. Villiers, *SS*, p. 212.

[29] Ibid., p. 190.

[30] Ibid.



Manama wharf on Bahrein Island, through which comes the entrepôt trade destined mostly for transshipment to Arabia. Shown in the foreground are hides, and in the background bales of cotton and earthenware water jugs



Persian carpets and brass-bound chests are usually carried by the captain as a private venture. Here a Persian captain is attempting to sell some chests to an English woman in Aden

[facing p. 190A]

505 trade, the profits of a sailing boat have diminished and the percentage of the population that supports itself this way is very small.

505 However, since all the food and clothing of the com-
439 munity must be imported, and in places even the water and building material, trade in the Persian Gulf reaches large proportions. Rice is imported by hundreds of thousands of sacks each year. A special steamer of the Standard Oil Company brings kerosene oil from New York. There is a large importation of the stronger and cheaper grades of foreign cloth. The rice and kerosene and the various imports from India, such as dishes and lanterns and all sorts of gaudy trinkets, are brought in steamers. The British India Steamship Company has a line of coasting steamers which call every week at the larger Gulf ports. Some food materials are brought from Mesopotamia and from Persia, and these smaller importations from near-by ports are often brought in sail boats. All of these imports are paid for indirectly with pearls. The last season before the Great War the value of the pearls marketed in Bahrein was estimated at three *crores* or about $9,000,000.

441 There are no merchants in the whole peninsula that are
516 so rich as the pearl merchants of the East Coast. There
566 are a few of these merchants that could rank as millionaires if their fortunes were measured in American money. These men are more or less educated and have traveled extensively. Many of them take newspapers and read modern books. Their establishments are places of great luxury and comfort, with many of the outward signs of modern civilization. Their houses and offices may be lit by electric lights, and their taste extends even
000 to motor launches and automobiles. The larger ports of

The larger ports of Kuwait, Bahrein and Dibai have also a large community of artisans and lesser merchants. These serve not simply the local diving population, but also act as manufacturers and wholesalers for the whole of Central Arabia. Practically the entire import and export trade for the interior of the peninsula goes through these three towns, and the merchant and artisan communities are large and prosperous. 468 441 439

It is difficult to be optimistic about the general situation in these pearl-diving communities. The actual material condition of the divers is bad enough, but worse by far is the discouragement and despair that have settled down upon the whole community. No one tries very hard to get out of debt, for he knows that barring some unforeseen miracle, he cannot do so no matter how long and hard he works and how economically he lives. There is little thrift; a stranger is often shocked by the waste that divers show in their personal and household expenditures. There is not the slightest effort, for instance, to discover what sort of clothing will give the most service for the money invested. Expensive or cheap, economical or wasteful, it is all the same. With luck when the present supply of money is gone, the captain will make another liberal allowance, and nothing better than that can be hoped for, no matter what economy and thrift are practised. 735 511 454 426

The conditions outlined above are those that obtain in the northern towns, chiefly in Bahrein. There is a second large diving community in the region known as the Pirate Coast, whose capital and largest city is Dibai. Its piratical character is a matter of history now long past, but it still makes a good deal of trouble for the British who police the Gulf and maintain order along the coast. 121

Kuwait MI 1

missed at least another 600, for no list which the dhows supply is really reliable, and each ship carries many persons who are without European documents. As a new dhow arrives, sometimes dozens of her passengers will drop quietly over the side and disperse themselves among the dhows already in the harbour. As with the disposal of the seamen's ventures, all Arabs take a delight, regardless of their ports of origin, in the general defeat of European regulations.

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MA [181]

II

At first glance, the whole deep-sea trade in dhows seems unorganized and almost unregulated. In point of fact, it is very well organized indeed, and has a tradition going back, probably, some thousands of years. There is no association of dhow owners in Arabia as there is a Country Craft Organization on the west coast of India, for the Arab of today is too inherently disunited and fiercely individualist to make this type of co-operation possible. But he can organize his own trade very well, nevertheless. The typical wealthy business family of Kuwait maintains offices, almost always managed by sons of the house who frequently rotate on the circuit, in all the more important centers of Arab coastal trade. The head office is at Kuwait or perhaps Basra, with branches at Aden (in the Crater, not at Steamer Point), Bombay, possibly one other west coast of India port, and Mukalla. Where there is not an actual branch of the family conducting business on a permanent footing, there is either a trusted agent (probably a relative), or one of the younger sons sent in the trading season to watch the family interests. This, for instance, is done at Berbera, in British Somaliland, which, when times are good, can absorb a surprising quantity of Iraqi dates carried there in dhows. The agent or family member is primarily responsible for the collection of debts — always a problem in a trade which is carried on without banking. A family carrying on business on such a scale will have a finger in perhaps a score big dhows, all nominally "owned" by their own *nakhodas*. The cash resources of some of these families must be enormous, and behind them stands the Sheikh of Kuwait, who was a wealthy man even before oil was discovered in his territory.

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K [643]

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505 439 However, since all the food and clothing of the community must be imported, and in places even the water and building material, trade in the Persian Gulf reaches large proportions. Rice is imported by hundreds of thousands of sacks each year. A special steamer of the Standard Oil Company brings kerosene oil from New York. There is a large importation of the stronger and cheaper grades of foreign cloth. The rice and kerosene and the various imports from India, such as dishes and lanterns and all sorts of gaudy trinkets, are brought in steamers. The British India Steamship Company has a line of coasting steamers which call every week at the larger Gulf ports. Some food materials are brought from Mesopotamia and from Persia, and these smaller importations from near-by ports are often brought in sail boats. All of these imports are paid for indirectly with pearls. The last season before the Great War the value of the pearls marketed in Bahrein was estimated at three *crores* or about $9,000,000.

441 515 566 There are no merchants in the whole peninsula that are so rich as the pearl merchants of the East Coast. There are a few of these merchants that could rank as millionaires if their fortunes were measured in American money. These men are more or less educated and have traveled extensively. Many of them take newspapers and read modern books. Their establishments are places of great luxury and comfort, with many of the outward signs of modern civilization. Their houses and offices may be lit by electric lights, and their taste extends even to motor launches and automobiles. The larger ports of 000

The larger ports of Kuwait, Bahrein and Dibai have also a large community 463 of artisans and lesser merchants. These serve not simply 441 the local diving population, but also act as manufacturers 439 and wholesalers for the whole of Central Arabia. Practically the entire import and export trade for the interior of the peninsula goes through these three towns, and the merchant and artisan communities are large and prosperous.

It is difficult to be optimistic about the general situation 735 in these pearl-diving communities. The actual material 511 condition of the divers is bad enough, but worse 454 by far is the discouragement and despair that have settled 426 down upon the whole community. No one tries very hard to get out of debt, for he knows that barring some unforeseen miracle, he cannot do so no matter how long and hard he works and how economically he lives. There is little thrift; a stranger is often shocked by the waste that divers show in their personal and household expenditures. There is not the slightest effort, for instance, to discover what sort of clothing will give the most service for the money invested. Expensive or cheap, economical or wasteful, it is all the same. With luck when the present supply of money is gone, the captain will make another liberal allowance, and nothing better than that can be hoped for, no matter what economy and thrift are practised.

The conditions outlined above are those that obtain in the northern towns, chiefly in Bahrein. There is a second 121 large diving community in the region known as the Pirate Coast, whose capital and largest city is Dibai. Its piratical character is a matter of history now long past, but it still makes a good deal of trouble for the British who police the Gulf and maintain order along the coast.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 312 502 438 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 442 439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they all end up in Bombay.

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

228 all end up in Bombay. The Indians drill, polish, and grade the pearls, and
442 string them on silk; these short strands are known as "Bombay bunches."
439 Before World War II the pearls were sent to India by streamer; today they
509 are usually sent by air from Bahrein, Kuweit, Sharjah, and Dharan. The
pearls are usually sold to Indian merchants in these towns, but occasionally the Arabs themselves take the pearls to Bombay.

After all the pearls have been sold, the nakhoda figures out the season's
228 465 profit. The owner of the dhows gets half the profit; the other half is divided among the crew. Most of the pearling dhows out of Saudi Arabian ports are small (not more than 40 feet), with crews of ten -- six divers and four attendants -- in addition to the nakhoda. Each diver and each attendant gets one share in the profits (about 4 per cent); the nakhoda gets two shares, unless he owns the dhow and longboat, in which case, of course, he gets more than half the profit. The number of shares each of the crew, the nakhoda, and the owner get is agreed on at the beginning of the season and may vary from place to place. Many of the pearling dhows out of Kuweit and Bahrein are considerably larger than those out of the Saudi Arabian ports and may have crews of forty or more; on these the nakhoda gets a larger number of shares.

Pearling is a gamble for everyone concerned, from the merchants to the divers. Some seasons are good, some bad; sometimes a boat has bad luck, sometimes excellent luck. A share on a pearling dhow should be worth several hundred rupees, but it may not be worth fifty.

Usually a share on a pearling dhow represents a year's wages, since the
228 426 pearling industry operates under the "debt system" mentioned above (not to be confused with the "truck system" of pearl fisheries elsewhere, in which the divers are paid off in produce). Under the debt system the divers and attendants are given cash advances during the winter season, when they are not working, and their families are given food and supplies while the season is on. The advances are deducted from their calculated shares, so that usually the worker gets little or nothing.

Thus the divers and attendants are perpetually in debt. Once a worker is in debt to a nakhoda, he cannot work for anyone else during the pearling season; this is one of the laws of the industry. He has virtually sold himself into economic slavery to the nakhoda, who has his services and never actually has to pay him anything, whereas he in effect pays the nakhoda in the pearls he produces. However, it should be remembered that the nakhoda is in turn usually in debt to some merchant, who commonly finances numerous nakhodas.

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his vessel pays practically no port dues. His dates can therefore 488
be warehoused in the dhow, until the market can easily absorb 439
them. 505

The dhow trade is "native" trade, a stubborn plant which has MA
been growing a long, long time. Nearly all the cargoes carried in 439
dhows are for the native bazaars, and almost never for European 443
account. Much of the cargoes consists of goods which the dhow captain himself, or some merchant or merchants travelling with him, sells for his own profit. The dhow is a peddler, as well as a carrier; a storehouse, as well as a ship; a means of livelihood to travelling merchants, as well as to her crew proper. Basra dates, though the most important outward cargo,[1] are only one source of revenue: there are a host of others, not necessarily always legitimate.

Kuwaiti owners of date plantations on the nearby Basra river K
play a considerable part in the financing of deep-sea dhows, MA
though in most cases the captains, called *nakhodas*, are at least [245]
the nominal owners. It suits the merchants well that the *nakhodas* 456
should regard themselves as the owners, for this provides them 471
with a cheap form of insurance. If the dhow be lost it is the 781
nakhoda's loss, and not the merchant's, for the poor captain must 466
pay back not only the value of the dhow but the advance of freight given him to finance his voyage. Since Islam forbids all forms of ordinary insurance, this arrangement is to the merchant's liking. The *nakhodas* must accept it, for in most cases there is no other way by which they can acquire a big dhow.

In Kuwait, immediately prior to the outbreak of World War II, there was beginning to be some restiveness about this, and an association of the *nakhodas* had the temerity to issue its demands upon the merchants. These included payment of demurrage when unduly delayed at the loading berths in Basra (a dhow might be kept for weeks waiting for her cargo), a sliding scale of freights for different ports instead of the customary flat rate of 1.5 or 2 rupees a package regardless of destination, liability for the return of advances to cease with the loss of the ship, two competent officers for every seagoing dhow, and so forth. The demands represente

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[1] Crew requirements and the very measurements of the dhows themselves are reckoned in terms of dates. A sailor to each 100 packages is the general rule, in Kuwait, and a dhow is spoken of there as having a capacity for 2,000 packages of dates, rather than as being of 100 tons burden. MA 804 505

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439 chants have a substantial share in the dhow's earnings, apart from the sailor's own ventures, which are limited to what they can stow in a sea chest on the poop. As far as I was able to discover -- and I was more than twelve months sailing in deep-sea dhows -- the freight from the dates, on the typical African voyage, is used to finance a cargo of salt from Aden and to purchase odds and ends which might earn a profit in the bazaars of the Benadir coast and
MA Kenya Colony. At the same time, the dhow carries all the passen-
[184] gers she can prevail upon to make a voyage, anywhere, for the Arab of Oman, and the Hadhramaut in particular, is an inveterate wanderer, and every dhow is a passenger vessel by the mere possession of deck enough to lie upon.

The salt is sold in the best market that offers between the Hadhramaut coast and Zanzibar. At the same time, the nakhoda does what trading he can in anything which he knows, from past experience, will command a market. The average dhow never leaves the Gulf without at least some carpets, allegedly Persian but generally of either Italian or English origin, which are used both as trade and as bribes. Cooking stones, ghee, live sheep, cows, sacks of rice and flour, dried fish, haberdashery of all sorts, brassware, cheap enamelware, Arab confectionery -- all these may be aboard, either as ship's ventures or as the crew's, generally the latter.

Every man of the crew concentrates on goods which can be bought cheaply in the free port of Aden, adulterated if possible in transit, and sold to the Somali or Swahili shopkeepers whose little stores abound in every port along the coast of East Africa, from Haifun in the north (which the Italians called Dante) to Mikindani in the south, which is about as far south as the Arabs sail in these days. Only Indian dhows go further, to Madagascar and the Comorin Islands. Gaily coloured turbans of the correct style

443 505 439 (for the manner of headdress worn in the different parts of Arabia and East Africa varies considerably; what will sell well at Mukalla, for instance, will find no buyers at Kuwait; and the Arab is a stickler for style), sarongs from Java and Japan, amber and artificial beads of the kind the true Moslem loves to fondle, cigarettes in gay packages but of no advertised brand, cheap perfumes (which I have several times seen the sailors laboriously adulterating with water from the ship's tanks), small crocheted caps to go under turbans, money belts, caps of artificial leather and pullovers of extremely artificial wool, veils for the harem, basketware from the Hadhramaut, sometimes a little hashish or *qat*[1] — these are the sailors' ventures, and the profits are their own.

The sailors are inveterate smugglers; almost none of the goods they bring — apart from the main cargo — is declared. Since they leave from small ports along the coast of Arabia where official supervision, while thorough, is not organized to conform with the Europeans' idea of how trade should be conducted, and since so much of their more highly dutiable goods are private ventures, such manifests as they produce to the authorities are useless. The mariner buys his goods himself, and sells them himself (though he does not mind disposing of them to boats alongside). He sees no point in accepting any official interference, and to him the European on the East African coast is still an interloper, recently arrived and wholly unnecessary.

508 484 486 The passenger trade is an important one, particularly in the East African voyaging. Though the Italians in their colonies tried to regulate the movement of Arabs, and the growth of Indian influence in Mombasa and Zanzibar has much lessened Arab trade and opportunities, still thousands of Omani and Hadhramaut Arabs travel down the Benadir coast and to Zanzibar annually. Every dhow fit to go to sea — and quite a few which look as if they are not — carries her quota, and some of the overcrowding is incredible. Among 35 Arab dhows which were lying together at Mogadishu, in Italian Somaliland, in the season of 1939, the Italian immigration authorities checked 4,000 passengers. They

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[1] A bush common to southern Arabia, especially the Yemen. The leaves, when chewed, are somewhat intoxicating.

of Dar es Salaam, loaded her with mangrove poles, and brought 505
her back to Zanzibar again, where the *nakhoda* had ostensibly 565
been trying to assemble passengers and extra cargo for the return 439
to Arabia but in fact had been enjoying a new harem.

Mates are paid by shares, and are, in my opinion, an oppressed 505
class. They carry their own ventures, engage in smuggling on a 565
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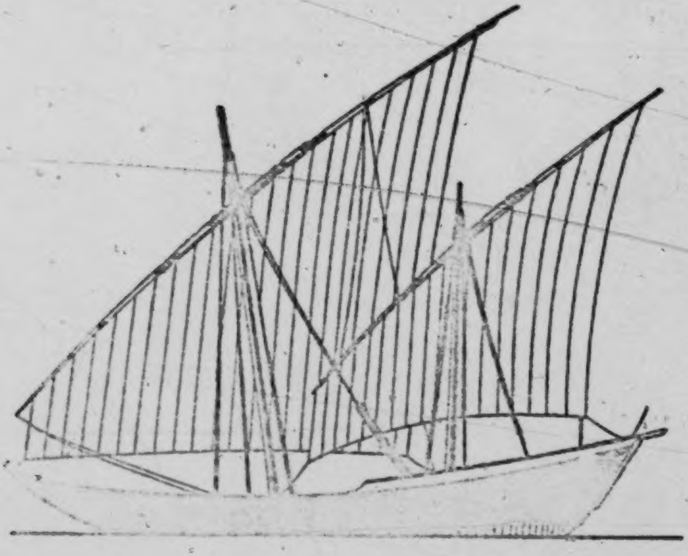

Baggala

small scale — haberdashery, currency, and so forth — and generally keep the ship's books. They may become *nakhodas* of small *booms*, running to the Basra river; but it is unusual for a man from the more dignified deep-sea trades to descend to this. There is no social status about the *nakhoda* of a coastwise water dhow.

Ships are built by shipwrights who employ no naval architects. 396
Both builders and riggers' lofts are unknown. The ships are put 501
together entirely by eye and take the traditional form either of [171]
the double-ended *boom*, or the carved and embellished *baggala*,
which obviously has a considerable ancestry from the Portuguese
galleon.

that any new crew members in Arab ships joined voluntarily; MA
vessels must not be overmanned, and crew and passenger lists 505
must be provided and in order; ships must be surveyed, and kept 567
seaworthy; and *nakhodas* must be certificated. As for the last, the Z
port officials conduct examinations, and the general principle 656
seems to be that if a man is capable enough to bring a dhow down to Zanzibar, certificate or no certificate, he can also be trusted to sail her away again. But the fee for examination is fifteen shillings, and the Arabs complain about it.

We touched at Zanzibar again after loading in the Rufiji, re- K
embarked our *nakhoda* and took aboard a few Swahili school- MA
teachers as passengers (they proposed to hire an automobile at 439
Kuwait to take them to Mecca), filled the decks with coconuts 505
and cases of soap and vermicelli, and departed toward the Persian Gulf again with the first of the broken weather at the end of the northeast season. We did not await the coming of the true southwest monsoons, for it sets in hard; we sailed direct to Muscat, in twenty-six days.

Muscat was depressed and there was no trade there, not even smuggling. All that changed hands, as far as I could see, was a box of Maria Theresa thalers, enormous Austrian coins minted in London for the Omani and available in Zanzibar at a price less than the exchange rate in Muscat. The Arabs turned everything to profit and were prepared to sell anything, even the ship. The K
sailors' pastime in the Rufiji was buying lemons — a thousand MA
for a shilling — and converting them into sherbet, which they 252
hawked in the *suq* at Kuwait throughout the summer.

Our cargo of mangrove poles sold at Bahrein, the ship returned to Kuwait, to lay up inside a coral breakwater until the new season's Iraqi dates ripened and it was time to go out again. At K
Kuwait, when all her people were returned — several relations of MA
the *nakhoda* had dispersed from Zanzibar back to Lamu and 451
Mogadishu to collect debts — a general balance sheet of the 465
whole round voyage was struck, the profits computed carefully, 439
and divided by a system of shares arranged traditionally. It was 505
not a straightforward statement of income and expenditure; I never saw or heard of any piece of Arab seafaring business which was as simple as that. It was all complicated by prior advances,

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debts, odd earnings not shared and even odder earnings which were shared, and mysterious complicated procedures, some of which I never did fathom, for the war came, and stopped my investigations.

The son of the merchant family which owned our dhow, however, told me that her gross profit on the nine-month round voyage was 11,000 rupees, not including the proceeds of the crews' and officers' private ventures. But I think he exaggerated, for the total investment in the dhow was little more than that. But at any rate, the dhow's people were well satisfied and they all, save one, went back to sea with her. The *nakhoda* grew fat throughout the summer, and took a new wife, and a new *boom* for his brother at a cost of 10,500 rupees; and I heard no complaints from the merchants.

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As far as I was able to discover, half the gross earnings went to the ship; this was the merchant's share. The cost of the food for the round voyage (which was not much, for all hands lived very simply and fishing lines were the most important equipment in what passed for her storeroom) was deducted from the other half, and the remainder was then divided by shares arranged strictly in accordance with the accepted value of each man's rating aboard. The sailor's share on the voyage which I made was reported to be 135 rupees (about $40), whereof 35 rupees had been advanced. This was little enough for such a long voyage, and though they worked hard at all sorts of things and were ready for any kind of business, I doubt whether a sailor's earnings from other sources amounted to more than 20 or 30 rupees, clear.

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I heard of dhows from Kuwait that season which were distributing less than 100 rupees; according to the Kuwaiti, who had no high opinion of them, the Suri rarely paid out more than fifty. To a sailor whose only home was the sand of the *suq* and his bed the cloak around him, whose wants were few and whose paradise was assured, even 50 rupees may be a vast sum of money. There was, at any rate, contentment throughout the Arab shipping industry as I knew it, and the quiet philosophy I learned among the simple seamen was of great help to me in the days of the long-drawn war which was soon to follow.

Kuwait MI 1

missed at least another 600, for no list which the dhows supply is really reliable, and each ship carries many persons who are without European documents. As a new dhow arrives, sometimes dozens of her passengers will drop quietly over the side and disperse themselves among the dhows already in the harbour. As with the disposal of the seamen's ventures, all Arabs take a delight, regardless of their ports of origin, in the general defeat of European regulations.

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At first glance, the whole deep-sea trade in dhows seems unorganized and almost unregulated. In point of fact, it is very well organized indeed, and has a tradition going back, probably, some thousands of years. There is no association of dhow owners in Arabia as there is a Country Craft Organization on the west coast of India, for the Arab of today is too inherently disunited and fiercely individualist to make this type of co-operation possible. But he can organize his own trade very well, nevertheless. The typical wealthy business family of Kuwait maintains offices, almost always managed by sons of the house who frequently rotate on the circuit, in all the more important centers of Arab coastal trade. The head office is at Kuwait or perhaps Basra, with branches at Aden (in the Crater, not at Steamer Point), Bombay, possibly one other west coast of India port, and Mukalla. Where there is not an actual branch of the family conducting business on a permanent footing, there is either a trusted agent (probably a relative), or one of the younger sons sent in the trading season to watch the family interests. This, for instance, is done at Berbera, in British Somaliland, which, when times are good, can absorb a surprising quantity of Iraqi dates carried there in dhows. The agent or family member is primarily responsible for the collection of debts — always a problem in a trade which is carried on without banking. A family carrying on business on such a scale will have a finger in perhaps a score big dhows, all nominally "owned" by their own *nakhodas*. The cash resources of some of these families must be enormous, and behind them stands the Sheikh of Kuwait, who was a wealthy man even before oil was discovered in his territory.

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fering to the common people. Nothing of that sort has ever happened in the pearl market. French dealers from Paris maintain an establishment throughout the year in Bombay where any man may come to sell his pearls. These men speak Arabic fluently and they buy the pearls in person. For about three months of the active season they send up one of the partners of the firm to act as purchaser in Bahrein itself, so that the Paris market is practically available to the poorest merchant and diver in Bahrein. It is a pleasure to testify to the fine character and courteous business-like dealings of these buyers. If Arabia's contact with the West could be confined to men of their type, her path would have fewer thorns and stones. A host of smaller Arab and Indian buyers pick up a certain percentage of the catch and handle it, partly with an eye to legitimate business and partly as a speculative venture. There is always a large amount of speculation in Bahrein and Bombay in connection with the fluctuations in the value of the pearls. Like every other sort of speculation, it carries with it a great temptation, and many are fascinated by the prospect of buying cheap and selling high. They often work with large sums borrowed from others and end with a crash, completely bankrupt. Fluctuations in the pearl market are very wide; pearls worth a thousand *rupees* this season may be worth double that or half of it the following season. Indeed on rare occasions they may drop to one-half their value overnight. Almost every one gets the fever for speculation during the season. I remember seeing an old slave bring to a pearl dealer a few small and misshapen pearls. "I bought these," he said, "for eight *annas* (sixteen cents); I am hoping to sell them for twelve *annas*."

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the dhows leave the banks. These men wander through the fleet 228
in their own boats (usually launches) always trying to get to a 437
first quality pearl before the other brokers hear of it, and always hoping that the *nakhoda* will not recognize its value. The
broker's paraphenalia consists of a magnifying glass, a small [413]
hand balance, weights, and a set of brass screens for grading the pearls. When pearls are sold on the banks they are ceremoniously transferred from the captain's red bunting to the broker's.

Regardless of where they are sold, the majority of the pearls 228
go to Bombay, and from Bombay eventually to Paris, the world's 439
pearl emporium. Pearls are usually shipped to Bombay by air. 456
The reason is simple: Usury and insurance are prohibited by the 784
Quran. If the pearls were shipped to India by Arab dhow or steamer through an Arab agent, there could be no insurance on the consignment. However, if the pearls are shipped via Trans World Airline or British Overseas Airlines Corporation, the pearls can be heavily insured. Thus, the Arabs use a Western agency to get around the Quranic prohibition. In Bombay, Indian workers skillfully pierce the pearls with fine bow-driven drills and string them on silk, graded according to color and size. The pearls are sold to European dealers in bunches consisting of a number of strings and generally known as "Bombay bunches."

When the season has ended and the pearls are sold, the captain 228
deducts the cost of the food and provisions. What is left repre- 465
sents the profit. Of this the owner of the dhow gets one-half; of the remainder each diver and each attendant gets one share and the captain two. Most of the dhows leaving Saudi Arabian ports are small (not over 40 feet) with small crews—usually something like 6 divers, 4 attendants, and a captain. Thus, each diver and attendant would get one twenty-fourth (about 4 percent) of the profits, and the captain would get one twelfth (about 8 percent). The pearling dhows operating out of Bahrein and Kuwait are generally much larger than the Saudi Arabian dhows, and may have crews of 40 or more. The profits of these craft are split in much the same way as the profits on smaller dhows, but the captain gets more shares with these larger crews than he does with the smaller.

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439 chants have a substantial share in the dhow's earnings, apart from the sailor's own ventures, which are limited to what they can stow in a sea chest on the poop. As far as I was able to discover -- and I was more than twelve months sailing in deep-sea dhows -- the freight from the dates, on the typical African voyage, is used to finance a cargo of salt from Aden and to purchase odds and ends which might earn a profit in the bazaars of the Benadir coast and
MA Kenya Colony. At the same time, the dhow carries all the passen-
184 gers she can prevail upon to make a voyage, anywhere, for the Arab of Oman, and the Hadhramaut in particular, is an inveterate wanderer, and every dhow is a passenger vessel by the mere possession of deck enough to lie upon.

The salt is sold in the best market that offers between the Hadhramaut coast and Zanzibar. At the same time, the nakhoda does what trading he can in anything which he knows, from past experience, will command a market. The average dhow never leaves the Gulf without at least some carpets, allegedly Persian but generally of either Italian or English origin, which are used both as trade and as bribes. Cooking stones, ghee, live sheep, cows, sacks of rice and flour, dried fish, haberdashery of all sorts, brassware, cheap enamelware, Arab confectionery -- all these may be aboard, either as ship's ventures or as the crew's, generally the latter.

Every man of the crew concentrates on goods which can be bought cheaply in the free port of Aden, adulterated if possible in transit, and sold to the Somali or Swahili shopkeepers whose little stores abound in every port along the coast of East Africa, from Haifun in the north (which the Italians called Dante) to Mikindani in the south, which is about as far south as the Arabs sail in these days. Only Indian dhows go further, to Madagascar and the Comorin Islands. Gaily coloured turbans of the correct style

[285] The diver holds onto
another line to which is tied an open-weave palm leaf basket for
228 the oysters; sometimes the diver has the oyster basket tied to his waist or around his neck and has the line tied to his body. When the diver is ready to come up, he gives several tugs on the rope. Thus the diver does not have to waste his valuable energy in swimming up or down. When he first reaches the bottom, he attempts to go out perpendicularly from the boat, frantically plucking all the oysters he can see before his air gives out. The diver usually crawls on one hand and one foot, using the other foot to propel himself and his free hand to collect the oysters.

228 The divers wear a horn noseclip similar to a clothespin; this
292 keeps the water out of their noses and enables them to hold their breath longer. Sometimes a diver will stuff cotton or beeswax into his ears to keep the water out. A set of leather finger thimbles protects his fingers from coral and other sharp objects; he wears only a loin cloth. This is the equipment universally used in the Persian Gulf, whether the diver is out of Kuwait, Bahrein, the
[164] Trucial Coast, or Persia. These divers wear no goggles and many have impaired vision from trachoma, so their efficiency is cut down considerably. It is strange that the Arabs have not added at least eye socket goggles, which the South Sea Island and Philippine pearl divers have eagerly accepted.

228 Alan Villiers states that the Kuwait pearl divers make ten
46 consecutive dives and then rest while a "substitute" makes ten; these two divers have the same attendant.[34] Divers in other parts of the Gulf work continuously, taking a rest all together at certain predetermined times, sometimes corresponding with prayer-time.

The diver stays under about a minute, then rests for two or three.[35] Ten dives would consume about three-quarters of an

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[34] A. Villiers, *op. cit.*, p. 392.

[35] The average length of time that a diver stays under water has long been a controversial question. Alan Villiers (*op. cit.*, p. 392), who spent two months with the Kuwait pearling fleet, states that the divers averaged about a minute, ranging from 40 to 90 seconds. O'Shea (*op. cit.*, p. 137), spending some time among the Trucial coast pearlers, states that divers there remain under water from 40 to 75 seconds, also averaging about one minute. Whitelock (*op. cit.*, p. 43), who visited the Trucial coast pearl fisheries one hundred years ago, stated that the divers averaged about 40 seconds under water, but that he never saw them remain over a minute. Hugh Smith (*op. cit.*, p. 183) states that in the Ceylon fisheries the Arabs are the best divers, staying down from 60 to 75 seconds, with a normal maximum of 90 seconds, and that there is an authentic case of an Arab staying under 109 seconds in seven fathoms of water. In any

hour, after which time the Kuwait diver is dragged out of the 228
water and huddles in some spot on the ship looking more dead 461
than alive. He may average four shifts a day, making a total of
40 dives; O'Shea states that under excellent conditions the Trucial divers average 50 dives a day.[28] During this time ~~he~~ has spent
almost one hour under water. Ten dives are not difficult, nor
are 50 excessive in one day for anyone experienced; but day after
day and week after week the diving goes on — for four months.
When the season is over, the diver has weathered the impossible; 228
he has probably completed over 3,000 dives in from 30 to 50 feet 461
of water, and has spent over 50 hours under the surface of the 147
Persian Gulf — that is, over a full forty-hour week without air,
valiantly striving to gather all the oysters he can see through his
blood-shot and irritated eyes, which become less sensitive with
each dive.

Every ten days or so the divers do get a day of rest, and if the 228
shamal is blowing they have to wait it out, as it roils the water. 461
Occasionally they have to go ashore to bury a diver who fails 147
to complete his 3,000 dives. It is not surprising that there are 164
one or two empty stations on each boat; their occupants lie
huddled corpse-like under their cloaks in some part of the ship,
too sick from scurvy or plain fatigue to dive. After they have been
at it for many weeks, the divers are apt to get convulsive shivers
when they come out of the water for their rest, even though the
temperature may be 110° F. and their tenders are covered with
a lather of sweat. There are few, if any, white men who could [771]
endure just one day of such punishment; the Arab could not
either except for his belief that Allah is merciful and that a
Paradise awaits him.

Every dhow has to put in for water and food every three weeks 228
or so. In recent years the pearling fleet has used the oil company's 312
pier at Ras Tanura for water, but vessels have been known to
replenish their water supply from some of the submarine springs
which gush into the Persian Gulf. A diver goes down with an [415]
empty skin and opens it in the potable stream; he can bring up
fairly fresh water by this means. One of thse submarine springs,

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case stories one hears about the amazing power of the Arabs to stay under water from 5 to 10 minutes or more are absurd.

[28] R. O'Shea, *op. cit.*, p. 137.

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There is a "diving court" which enforces the arbitrary laws 228
of the industry, such as those dealing with engagement of labor, 698
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a *nakhoda* who cannot pay off his debts; the *nakhoda* may lose his boat and divers, but not his personal property.

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ruling sheikhs to better the lot of their subjects: if they were un- 464
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work harder during the pearling season to pay off their winter's
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of some sort on the proceeds, the pearlers in a sense work for them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a farmer, fisherman, or herder there would be little incentive to enter the pearling purgatory. Under normal conditions the divers have an eight months' loaf during which time they live off their *nakhoda;* this is to the liking of both the diver and the *nakhoda.*

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mariners. The depression of the thirties hit the Persian Gulf 464
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of thousands of pearlers in the Gulf found themselves without an occupation. The marine stock of Kuwait rose to the situation and gradually shifted to cargo hauling between Kuwait and
Basra, Iran, India, South Arabia, and East Africa. Large ocean- [501]
going double-ended dhows have carried the fame of Kuwait seamanship throughout the Middle East, sailing to Africa on
one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

228 his great toe completely severed by a large piece of faroush that had slipped and hit his foot as he stood on the sea bottom.

Hasa, known to Americans familiar with native construction in Arabia as "sea rock," is found on the sea bottom in more or less solid deposits, from which a diver pries pieces (Fig. 15). Faroush is much more difficult to mine: it takes at least a day to get a boatload, whereas a crew may get three or four boatloads of hasa a day. Faroush is sold by the square measure, hasa by the cubic measure.

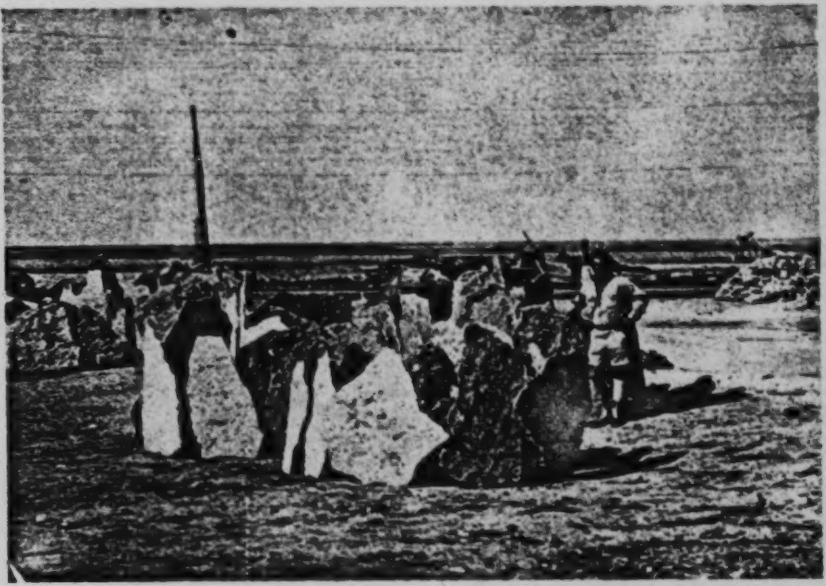

FIG. 14—Author standing by slabs of *faroush* on the shore of Bahrein Island. Faroush is mined near Bahrein in much larger pieces than in Arabian waters. Pile of *hasa* in right background.

228 The rock divers, like the pearl divers, work only in the warmer months.
464 Since they generally work in water that is shallower than the pearl waters
and therefore remains warm longer, the mining season is two or three months
461 longer than the pearling season, which is only four months. The rock divers
do not work constantly, hour after hour, day in and day out, as the pearl
[339 divers do, since each boatload has to be sailed to shore. A small stock pile
317] of faroush and hasa is always maintained in every seaboard town, and most
of its buildings are constructed from these two rocks. Lime is made by burning hasa.

426 The crews mining coral rock work on the "debt system," notoriously
465 exploited in the Persian Gulf pearling industry. Although they are paid good

228. Each diver has two lines, one attached to a stone or iron diving weight; so that they will not become fouled, they are passed over sweeps left projecting over the gunwales athwartship and lashed down to the tholepins. The diver puts his feet into a loop over the diving weight (or simply lets the rope pass between his toes), releases the rope by untying a slipknot, and, holding the rope tightly, plummets to the bottom. As soon as he releases the line with the weight attached, the attendant hauls it to the surface. In the meantime the diver frantically plucks all the oysters he can before exhausting his air. He usually crawls on one hand and one foot, propelling himself with his free foot and collecting the oysters with his free hand. He puts the oysters into an open-weave palm-leaf basket fastened to his waist or around his neck, or hitched to a rope (which he holds or which is tied to his body). When he is ready to come to the surface, he jerks this rope.

The maximum depth at which the divers work is about 12 fathoms (72 feet). The average length of time they remain under water has been greatly exaggerated: some stories say 5 to 10 minutes. Villiers,[4] who spent two months on a buyer's *jalbut* with the Kuweit fleet, states that the divers stayed under water from 40 to 90 seconds, averaging about a minute. O'Shea[5] spent some time with the divers of the Trucial Coast, and he also states that the time averaged about a minute, ranging from 40 to 75 seconds. Hugh Smith[6] observes that the Arabs are the best divers employed in the Ceylon fisheries, staying down from 60 to 90 seconds; he cites an authentic case of an Arab who stayed down 109 seconds in 7 fathoms of water.

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461 Ordinarily the diver remains under water for about a minute and rests for two or three minutes; on a good day he may make 30 or 40 dives, totaling half to three-quarters of an hour, and by the end of the season he may have completed more than 3000 dives in 30 to 50 feet of water.

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461
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136 The diver's worst enemy is fatigue. He has little fear of sharks and, indeed, is seldom bothered by them, though O'Shea[7] speaks of an attack on 30 divers, two of whom were killed under water. Whitelock[8] states that the greatest fear of divers on the Trucial Coast is the sawfish, which has been known to cut divers in two. The creature most feared by the divers in the Persian Gulf, at least on the north banks between Kuweit and Bahrein, is a jellyfish known to the Arabs as the *dawl*, which has two- to three-foot stinging tentacles; these are easily put out [illegible]

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[4] Alan Villiers: Sons of Sinbad, New York, 1940, p. 392.

[5] Raymond O'Shea: The Sand Kings of Oman, London, 1947, p. 137.

[6] H. M. Smith: The Pearl Fisheries of Ceylon, *Natl. Geogr. Mag.*, Vol. 23, 1912, pp. 173–194; reference on p. 182.

[7] *Op. cit.*, p. 138.

[8] H. H. Whitelock: An Account of the Arabs of the Pirate Coast, *Trans. Bombay Geogr. Soc.*, Vol. 1, 1844, pp. 32–49; reference on p. 43.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

229 312 502 438 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 442 439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they all end up in Bombay

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

228 501 plement of long heavy oars, so that they can be independent of the wind when necessary. One of these great diving boats moving out to sea is a sight long to be remembered. I once watched one of the largest Dibai [504] boats leave for the pearl banks. During the winter these boats are hauled up on the sand within a lagoon that runs through the city. The ~~great boat moved~~ majestically down this lagoon and out to sea. There were fifteen to twenty enormous oars on each side and each oar was manned by two divers. The oarsmen swung down the [461] lagoon with a stateliness that I have never seen surpassed, the men chanting as they worked, *"A billah mal, a billah mal,"* in a rhythm that had all the swing of a regiment off to war or a football team on its way to a game. There was a splendid silk flag flying at the stern, and the great ship went out to sea with every small boy in Dibai wishing he was on board. I felt the thrill of it myself; and the Baluch boy that I had with me as a medical assistant had hard work to keep both his feet on the ground. "Oh *Sahib,*" he said, "it makes me want to go with them."

However, once the pearl banks are reached, the work is hard and dangerous. The long oars are fastened in place so that they stretch out horizontally over the water and to each oar a rope is tied which carries a lead weight 228 or a stone on its end. The diver stands on this weight as he descends, in order to get down quickly. Each diver has an assistant whose duty it is to haul up the weight as soon as the diver reaches the bottom, so that it may be ready for the next descent. There is a second rope which is fastened around the diver's waist. By this his assistant pulls him up when he gives the signal. This assistance is not necessary if the diving is in shallow

721 Political troubles became acute some ten years ago or more, and for many years no foreigner was allowed to land on that coast. It was a double pleasure, then, to be invited to visit that part of Arabia four years ago. It* 567 is the one remaining nest of slavery in eastern Arabia and the district is still troublesome at times to the bearers of constituted authority, but nothing of that sort is ap- 576 parent to the visiting doctor. The rich and the poor alike are most courteous and pleasant hosts.

228 In this district* the pearl-diving system is the same as 461 in Bahrein, but the men do not work nearly so hard. They set out to work later in the season, although if the temperature of the water were the only element in their decision, they might be at work sooner, for they lie farther to the south and their water warms up considerably before that near Bahrein. They return to the shore oftener and show much less energy in their work. The pearl banks in the region of the Pirate Coast are less rich than the Bahrein banks, and as might be expected, their catch is much less valuable than that of the boats farther 511 north. It is interesting to see that divers on the Pirate Coast live at about the same general level as those in Bahrein. They could not live at a much lower level, for it would mean starvation. The larger receipts in the Bahrein area have as their only result the creation of a much richer class of pearl merchants than the similar class on the Pirate Coast.

567 464 461 Unquestionably it is the slaves who have reduced the standards of what a day's and a season's work ought to be to its present level on the Pirate Coast. Most of these slaves are negroes from Africa. A few are Baluchs from the Makran coast between India and Persia. They do not number over one-half the divers, probably far

*[The Pirate Coast and its capital at Dibai --Analyst]

Maritime Arabs MK2
Bahrain MZ2

less than that, but their attitude of listlessness and in- M 567
difference has tended to pull all the rest down to their 464
level. Just why slavery never took root in Bahrein, why 461
the Arabs there never bought slaves to do their diving, B
is difficult to see. It seems such an easy way to get rich. [567]
One reason why Bahrein is a much stronger community
financially now than its southern competitor is the fact
that slaves have never been brought in to any large extent.

It is a great temptation, this opportunity to have one's M
work done by slaves, and nothing could seem to offer 567
greater profits. The slaves have no rights. They can
be punished if they show less diligence than their owner
thinks adequate. They receive no wages at all, only such
food and clothing as their master sees fit to give them.
Arabs are not the only people that have been deceived
by this fallacy. We believed it ourselves a hundred years
ago. It has been a disastrous policy from every standpoint.
Nothing could exceed the indifference and laziness
of the average slave under such conditions. The
money spent on food and clothing for these slaves brings
a smaller return in service rendered than any wages paid
in Arabia. Of that much any one is sure who has
watched them work, or rather has watched their very successful M
efforts to avoid doing any work. Prostitution is 567
commoner on that coast than in any other eastern Arabian 548
community. Slave women are the toys of any man who
buys them, and what the Pirate Coast sowed in its treatment
of helpless women slaves, it is reaping in an atmosphere
of degradation that envelops the entire community
from the lowest to the highest.

As passive resisters these slaves are superb. I have M
seen one of them, disgruntled by some mistreatment or 567
insult, simply lie down on the job and no expostulation 158

estimate of the number of boats operating in 1946 would be as 228
follows: 464
178

Bahrein	150
Kuwait	100
Darin, Qatif, Jubail	30
Trucial coast, Qatar, and Persian ports	250
	530

Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the 228
coincidence of the pearling season with the date harvest. Starting 245
about June there is a migration of men northward from the
Batinah Coast to the Trucial Coast; these men work the pearl 221
fisheries. Some go north in caravans, others sail up in their 462
bedens and other dhows. Opposed to the flood of men who make 484
this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home.

Bertram Thomas states that a considerable percentage of the 228
army of men annually migrating northward to the Trucial Coast 567
is composed of slaves.[17] These Batinah contingents are usually 464
accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.[18]

Pearl fishing is a seasonal occupation, as the divers must wait 228
for warm summer water before starting to dive. Probably few 464
people realize there is a winter in the Persian Gulf, and that 132
the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

[18] Ibid., p. 143

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There is a "diving court" which enforces the arbitrary laws 228
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There has never been any noticeable effort on the part of the 651
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employed for long periods in the winter they would be sure to 461
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of some sort on the proceeds, the pearlers in a sense work for them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a farmer, fisherman, or herder there would be little incentive to enter the pearling purgatory. Under normal conditions the divers have an eight months' loaf during which time they live off their *nakhoda;* this is to the liking of both the diver and the *nakhoda.*

However, many divers do find other work, as fishermen or 463
mariners. The depression of the thirties hit the Persian Gulf 464
pearl industry with great suddenness. Within a short period tens 505
of thousands of pearlers in the Gulf found themselves without an occupation. The marine stock of Kuwait rose to the situation and gradually shifted to cargo hauling between Kuwait and
Basra, Iran, India, South Arabia, and East Africa. Large ocean- [501]
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one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

Maritime Arabs MI 2
Kuwait: MI 4

M 438 All the cities along this coast north of Ras el Kheima
361 are diving communities, and some of them are quite large.
k Kuwait, the largest, has about fifty thousand inhabitants.
161 Kuwait has good harbor facilities, and the government of
228 the city has been notably efficient and strong-handed for
439 many years. A pearl diver may as well live in one coast
312 town as another, and so Kuwait has grown to be a large
262 city. The drinking water for this entire city is brought in specially constructed sailing vessels from the mouth of the Arab River in Mesopotamia sixty miles away. The divers live on rice that is brought them from India, on wheat that comes from Persia, and on sheep from inland Persia and Arabia. The only local product is fish. The physical surroundings of all these towns are very similar to those of Kuwait. The landscape is an unbroken and monotonous expanse of sand on one side
[k and sea on the other. The heat in summer is ex-
132] treme and the air is practically always moist, so that for three or four months in the summer the climate is almost unbearable.

M In the spring the diving community begins to hum
228 with activity. The boats are cleaned up and repaired.
463 New masts are put in and new rigging provided. As the time for diving approaches, supplies of food and water are taken on board. The divers collect from far and near. Most of the population are divers, and in addition many more come from a distance to dive for the season. There are men from every district in Arabia and from all over Mesopotamia; a few come even from the various provinces of Persia. The place is filled with festivities and good fellowship and hopes for a successful season.

M The day for embarkation finally comes. The boats
228 are fitted with enormous sails, and also with a full com-
501

Bahrain MZ2
Maritime Arabs MK2

B
971 time and then break up and disappear. Few care whether
185 they live or die. One of the Bahrein sheikhs made a visit
658 to England at the invitation of the British Government
about three years ago. On his return he collected nearly a hundred thousand dollars for the founding of a free public school. A large building was projected, but by inefficiency and carelessness, if not worse, the entire sum was spent on the first story of that building. Now the project languishes and seems about to die, purely because nobody cares whether it lives or not. Even Koran schools are few in number and poor in quality. There is nothing like the diffusion of education that prevails in the inland desert towns.

M
463 Although the vast majority of the people in these towns
226 are pearl divers, there are a few fishermen and a smaller
number who gain a precarious livelihood as sailors in Arab sailing ships. There are abundant supplies of fish in all these harbors, but fishing is a very unpopular occupation. It is hard, disagreeable work, and the men must frequently be out in the little boats all night. When times are good and the captain's allowances liberal, nobody is willing to fish. When the pearl catch is bad or the price low every one feels poor, many eke out their small resources by this additional work, and fish becomes plentiful and cheap.

M
505 There were once many sea-going sail boats engaged in carrying various cargoes from port to port in this district, for the Arabs are bold navigators and can travel in these ships from India to the Suez Canal. They still bring goods from the various East African ports to Arabia, and rarely fail to make these long trips successfully, but the work is hard, and since the steamers of the "Ingleez" have absorbed more and more of the better

5: Harrison D-4 (1912-1924) 1924 M1 Middle East
Maritime Arabs MKa

The larger ports of
Kuwait, Bahrein and Dibai have also a large community 463
of artisans and lesser merchants. These serve not simply 441
the local diving population, but also act as manufacturers 439
and wholesalers for the whole of Central Arabia. Practically the entire import and export trade for the interior of the peninsula goes through these three towns, and the merchant and artisan communities are large and prosperous.

It is difficult to be optimistic about the general situa- 735
tion in these pearl-diving communities. The actual ma- 511
terial condition of the divers is bad enough, but worse 454
by far is the discouragement and despair that have set- 426
tled down upon the whole community. No one tries very hard to get out of debt, for he knows that barring some unforeseen miracle, he cannot do so no matter how long and hard he works and how economically he lives. There is little thrift; a stranger is often shocked by the waste that divers show in their personal and household expenditures. There is not the slightest effort, for instance, to discover what sort of clothing will give the most service for the money invested. Expensive or cheap, economical or wasteful, it is all the same. With luck when the present supply of money is gone, the captain will make another liberal allowance, and nothing better than that can be hoped for, no matter what economy and thrift are practised.

The conditions outlined above are those that obtain in the northern towns, chiefly in Bahrein. There is a sec- 721
ond large diving community in the region known as the Pirate Coast, whose capital and largest city is Dibai. Its piratical character is a matter of history now long past, but it still makes a good deal of trouble for the British who police the Gulf and maintain order along the coast.

THE PEARLING FLEETS

The bulk of the main pearling fleets sticks together, the Ku- 502
wait fleet moving down the coast while the Bahrein fleet moves 228
up. The pearlers of the Trucial Coast follow the banks from Ras al-Khaymah to Qatar, a straight-line distance of over 400 miles. The Oman pearlers never go above Halyl Island; they work various areas around the islands in small fleets of 10 to 20 boats, the smaller vessels usually working the grounds nearest their home ports. A pearler assumes a position on the edge of a bank so that by paying out anchor line it will drift across the bank. When the divers begin to bring up only a few oysters, the boat is allowed to drift to a new position. After it has worked completely across the banks, the crew moves it back with the sweeps, to chants and drum beating. It is here that the true skill of the *nakhoda* comes into play — to keep his ship over virgin beds. When day ends the large ships stay on the beds and the crew settles down for the night; the smaller ships usually make for a protected anchorage.

Estimating the number of dhows and men employed in the 228
Persian Gulf pearl fisheries is similar to estimating the popula- 464
tion of the Arabian Peninsula. The published figures are largely based on Arab guesswork; most of them are probably much too high. Registers of a sort are kept in every town and port along the coast sending boats to the fisheries, so that figures do actually exist. But these are not published, and an accurate count would necessitate a survey of the whole long Gulf littoral.

In one of the earliest European references to pearling in the Persian Gulf, Niebuhr states that in 1763 the inhabitants of Kuwait lived by the fishery of pearls and fishes, and were said to employ more than 800 boats in these tasks.[11] Over half a century later, Wilson estimated that the pearl fishing boats on Bahrein amounted to about 1,500.[12] In a short account of pearling on the Trucial coast, Whitelock states that in the 1840's there were said to be something over 3,000 boats in the Gulf fisheries.[13] Whitelock adds that the smallest boats had 5 men and the

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[11] Carsten Niebuhr, *Travels Through Arabia* (Edinburgh, 1792), p. 127.

[12] D. Wilson, *op. cit.*, p. 285.

[13] H. H. Whitelock, "An Account of the Arabs of the Pirate Coast," *Trans. Bombay Geographical Soc.* I (1844), pp. 42, 45.

228 464 largest about 18; but as the smaller boats were the more numerous, he used 9 as an average to arrive at a total of 29,000 men employed in the pearl fisheries.

Zwemer estimated the number of pearling boats out of Bahrein in 1896 as about 900, those out of Qatar as 200, and total number of boats as 5,000, employing 30,000 men.[14] However, the figure of 900 does not seem to justify the total of 5,000; since Zwemer lived on Bahrein Island the figure of 900 would seem to be the more accurate. Zwemer is apparently responsible for the figure of 5,000 dhows in the pearl fisheries which has appeared in print so frequently since: Villiers and Simpich state that there were 5,000 boats at the turn of the century, employing 80,000 men,[15] while O'Shea states that in normal times there are about 5,000 boats employing 74,000 men.[16]

Evaluating these estimates and others not mentioned, one is led to the conclusion that there were never over 3,000 boats engaged in the Persian Gulf pearl fisheries, and probably not over 40,000 men. Taking the figures that may be considered as relatively reliable, we arrive at the following average for the fleet during the boom years:

Bahrein (Zwemer)	900
Kuwait	600
Qatar (Zwemer)	200
Eastern Arabian ports	200
Trucial coast (Whitelock)	700
Persian ports (Whitelock)	100
	2,700

This figure would seem to be a fair estimate for the size of the pearling fleet at the turn of the century, and if anything is on the high side

228 464 178 The first few decades of the present century were the last prosperous years that the Gulf pearl fisheries saw. Whereas, at the turn of the century there were almost 3,000 boats engaged in the fisheries, today there are hardly one-fifth that number. An

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[14] S. M. Zwemer, *op. cit.*, pp. 100–101.

[15] Alan Villiers, *Sons of Sinbad* (New York, 1940), p. 373; Frederick Simpich, "Rise of the New Arab Nation," *National Geographic Magazine*, vol. 36 (1919), p. 388.

[16] R. O'Shea, *op. cit.*, p. 132.

estimate of the number of boats operating in 1946 would be as 228
follows: 464 ●
178

Bahrein	150
Kuwait	100
Darin, Qatif, Jubail	30
Trucial coast, Qatar, and Persian ports	250
	530

Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the 228
coincidence of the pearling season with the date harvest. Starting 245
about June there is a migration of men northward from the
Batinah Coast to the Trucial Coast; these men work the pearl 221
fisheries. Some go north in caravans, others sail up in their 462
bedens and other dhows. Opposed to the flood of men who make 464
this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home.

Bertram Thomas states that a considerable percentage of the 228
army of men annually migrating northward to the Trucial Coast 567
is composed of slaves.[17] These Batinah contingents are usually 464
accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.[18]

Pearl fishing is a seasonal occupation, as the divers must wait 228
for warm summer water before starting to dive. Probably few 464
people realize there is a winter in the Persian Gulf, and that 132
the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

18 Ibid., p. 143

228 464 132 for the minimum winter air temperature to be in the middle forties; during this period the sea water temperature in shallow water will be in the low sixties.

228 147 464 132 Pearl diving requires that the diver's body be almost continually in the water. From experience the Arabs have found that the surface water temperature has to be about 85° F. before continued deep-water diving is feasible; thus the main pearling season (*al-ghaws al-kabir*, or "great diving") averages four months — from June into the first week of October. During this time the maximum surface water temperature exceeds 90° F. (in August) off Hasa. O'Shea states that on the Trucial Coast *al-ghaws al-kabir* often lasts until late October, the water apparently remaining warmer longer there than further north.[19] In addition to *al-ghaws al-kabir*, there are two other seasons: the "cold diving" season (*al-ghaws al-barid*) running from April to May, and the *mujannah*, running from October to March. The smaller boats run out in the shallower (warmer) waters for *al-ghaws al-barid* and act as a barometer for the season, while the *mujannah* is worked by waders who work along the shore when the tide is out, many equipped with glass-bottom "look boxes."

527 228 For *al-ghaws al-kabir* the various fleets, whether from Kuwait, Bahrein, or the Trucial Coast, leave port en masse with flags flying, to the beating of drums and Arab chants. The few boats from the smaller ports slip out without fanfare. It is a stirring sight to see these fleets of dhows maneuver with their sweeps and then set forth under huge spreads of lateen sails, with their freshly oiled, burnt-brown hulls glistening across the aquamarine water, like some ancient Phoenician or Roman fleet.

228 502 An admiral represents the pearl fishing fleet of each port. It is the admiral's boat which leaves the port first, and the admiral's duty to determine when the water becomes too cold for continuous diving. It is considered improper (by the owners) for the *nakhoda* of any large vessel to leave the pearl banks before the admiral leaves.[20]

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[19] R. O'Shea, *op. cit.*, p. 137.

[20] The admiral of al-Khobar, Saudi Arabia, now works for the Arabian American Oil Company, for al-Khobar no longer sends vessels out to the pearl grounds.

their graves, and justly, too, for diving probably hastened their 228
end. The Government demands that account books be given each 656
diver and that they be kept up properly, and sends inspectors to 426
see that they are. Before the season begins at Bahrein the amount of cash advances is agreed upon and proclaimed. The divers have put up a terrific objection to this limitation, for it seemed to them that they were simply getting less money. They could not understand that their debt was being lowered—in fact they did not care, for hadn't they always been in debt?

There is a "diving court" which enforces the arbitrary laws 228
of the industry, such as those dealing with engagement of labor, 678
taxes, spurious pearls, etc. The court also disposes of any case of 686
a *nakhoda* who cannot pay off his debts; the *nakhoda* may lose his boat and divers, but not his personal property.

There has never been any noticeable effort on the part of the 651
ruling sheikhs to better the lot of their subjects: if they were un- 464 ●
employed for long periods in the winter they would be sure to 461
work harder during the pearling season to pay off their winter's
debts. As the local sheikhs levy a tax on every boat and get a cut 426
of some sort on the proceeds, the pearlers in a sense work for them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a farmer, fisherman, or herder there would be little incentive to enter the pearling purgatory. Under normal conditions the divers have an eight months' loaf during which time they live off their *nakhoda;* this is to the liking of both the diver and the *nakhoda.*

However, many divers do find other work, as fishermen or 463
mariners. The depression of the thirties hit the Persian Gulf 464
pearl industry with great suddenness. Within a short period tens 505
of thousands of pearlers in the Gulf found themselves without an occupation. The marine stock of Kuwait rose to the situation and gradually shifted to cargo hauling between Kuwait and
Basra, Iran, India, South Arabia, and East Africa. Large ocean- [501]
going double-ended dhows have carried the fame of Kuwait seamanship throughout the Middle East, sailing to Africa on
one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

44 maritime *nakhodas* are having difficulty in getting crews. Many of their sailors, who also operated under the debt system, are now working for oil interests.

44 315 On Bahrein oil began to be developed as early as 1932, just when the pearl industry started its real slide. Oil come late for Saudi Arabia, and it was not until 1945 that the industry absorbed large numbers of native laborers. By then the town populations were so well adjusted that most of the labor came from the desert Bedouins. These jobs with the oil companies at first absorbed the unemployed, but as the oil projects developed they have absorbed more than the unemployed, until now the *nakhodas* of Bahrein, Kuwait, and Saudi Arabia are having an increasingly hard time finding divers; the divers are working for the oil companies and paying off their debts.

The Trucial Coast has yet to have the oil boom wash its shores. Today many men still make the northern trek from the Batinah coast, and the *nakhodas* there have little difficulty in finding
[556] pearling crews. But the happiest Arabs in the Gulf are the sheikhs in the oil areas, for even though their revenue from pearls is at an all-time low, they now get their cut from oil, a much more lucrative and reliable commodity.

Kuwait MI1

K MA 396 439

building and trading port of the Persian Gulf, though offering little trade itself. Its only real rival in the deep-sea trade was the ancient port of Sur, near Ras al-Hadd, on the Gulf of Oman. Figures for the port of Sur were unobtainable, but there must have been at least 100 deep-sea dhows sailing from there, the majority to Mogadishu, Mombasa, and Zanzibar. Several ports on the Trucial Coast of Oman also sent their quota of deep-sea ships to Africa and India; and Muscat and Mutrah Bay, and the ports of Lingeh and Qishm, in Iran, contributed a few. But the flag of Iran was a rarity in both Indian and African ports, compared with the Arab.

K MA 396 439 464

In addition to the Persian Gulf and Omani ports, Mukalla in the Hadhramaut, Ma'alla by Aden, Hodeida, Mocha, and Luhaiya in the Yemen, and Qizan on the coast of Asir in the Red Sea, all build and maintain considerable fleets of dhows. These I have seen, personally; there are many ports I was unable to visit. It is probable that the dhow trade round the Arab coasts employs upwards of 2,000 vessels of one sort or another, in which at least thirty or forty thousand men gain some sort of livelihood.

K M.A. 439 505

For many years, steamers of the British India Company have been trading in the Persian Gulf. Kuwait is still well served by steamers from Karachi, and an occasional long-voyage vessel used to put in from New York and London, even before the oil resources began to be exploited in 1940. American, German, Italian, and British lines, none of them likely to overlook any cargoes, all traded to the Gulf. The African East Coast and the Indian coasts are even better served. How is it, then, that a dhow trade of such importance still survives? How is it organized, and how managed?

K M A 488 437 505

One reason — perhaps the chief — why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and

226 one in each hand (Fig. 9), he works the net around the edge of the stockade and empties the fish into palm-leaf baskets (Figs. 10 and 11). Most of the fish weigh less than a pound, but it is not unusual for a weir to yield many hundreds of pounds of fish in a tide change, though sometimes only enough are caught to feed the fishermen. The fish are usually sorted into two or three grades and are often sold on the spot. Several times I saw sharks as large as six feet trapped in the stockade; extracting these monsters was a delicate task. Most of the cuttlefish used as bait in the basket fishtraps come from these palm-stem fishweirs.

There seems to be a direct correlation between the amount of fish caught in a weir and the wind velocity, at least on the Ras Tanura peninsula. The Arabs can estimate their catch simply from the atmospheric conditions prevailing before low tide: if the *shamal*, the strong north wind, has been blowing, the haul is sure to be good.

I never saw the effect of the wind fail. In the fall jumbo shrimp, equal to any found in the Gulf of Mexico, are caught in these weirs. If there had been little wind, the catch would be small, but if the wind had been considerable, there were sure to be several dozen nice shrimp. The 10 weirs on the Tarut Bay side of Ras Tanura yielded at the most only several dozen shrimp, most of which came from two funnel weirs; the shrimp that appeared in local markets in large quantities came from the weirs on the flats
[251] around Qatif. The shrimp in Arabian markets is sun-dried, so that it can be stored and sold in any season.

As a rule, the men who work a fishweir get half the profits, and the owner gets the other half. The profits are figured by deducting from the gross return the cost of the workers' food and of the material required to maintain the weir. If a trap fails to produce, the owner sometimes supplies the tenders with cash, which must be repaid later.

In summer the daylight low tide in the Persian Gulf at Ras Tanura is about two feet higher than the minimum, in February. The water does not get low enough in the weirs to trap fish effectively, and the summer catch
[228 is therefore poor. Usually trap tenders are assigned to pearl diving and rock
464] mining, possible only in the warmer months; one man is left to collect the small catch and keep the weir in condition. When Ramadan, the great Moslem fast month, falls in summer, the Arabs on Tarut Bay allow their fishweirs to fall into disrepair. It is surprising how fast a weir will disintegrate under even the slight wave action in a sheltered area such as Tarut Bay. In 1945 there were several strong shamals during Ramadan (then the last two weeks in July and the first two in August), which, coupled with the

[text continued on p. 393]

228 his great toe completely severed by a large piece of faroush that had slipped
and hit his foot as he stood on the sea bottom.

Hasa, known to Americans familiar with native construction in Arabia as "sea rock," is found on the sea bottom in more or less solid deposits, from which a diver pries pieces (Fig. 15). Faroush is much more difficult to mine: it takes at least a day to get a boatload, whereas a crew may get three or four boatloads of hasa a day. Faroush is sold by the square measure, hasa by the cubic measure.

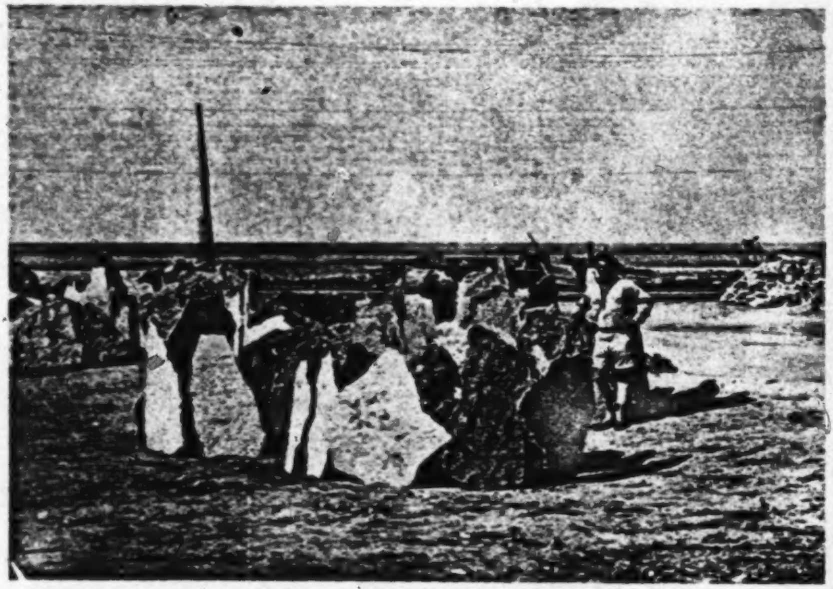

FIG. 14—Author standing by slabs of *faroush* on the shore of Bahrein Island. Faroush is mined near Bahrein in much larger pieces than in Arabian waters. Pile of *hasa* in right background.

228 The rock divers, like the pearl divers, work only in the warmer months.
● 464 Since they generally work in water that is shallower than the pearl waters
and therefore remains warm longer, the mining season is two or three months
461 longer than the pearling season, which is only four months. The rock divers
do not work constantly, hour after hour, day in and day out, as the pearl
[339 divers do, since each boatload has to be sailed to shore. A small stock pile
317] of faroush and hasa is always maintained in every seaboard town, and most
of its buildings are constructed from these two rocks. Lime is made by burning hasa.

426 The crews mining coral rock work on the "debt system," notoriously
465 exploited in the Persian Gulf pearling industry. Although they are paid good

wages, they are given cash advances and food during the winter and during 421
slack periods. They never seem able to pay off their debts to the dhow 415
owners.

PEARLING

The most colorful marine industry of the Persian Gulf is pearling.[3] 228
Pearling is definitely a seasonal occupation, confined to the months when 132

[501]
464

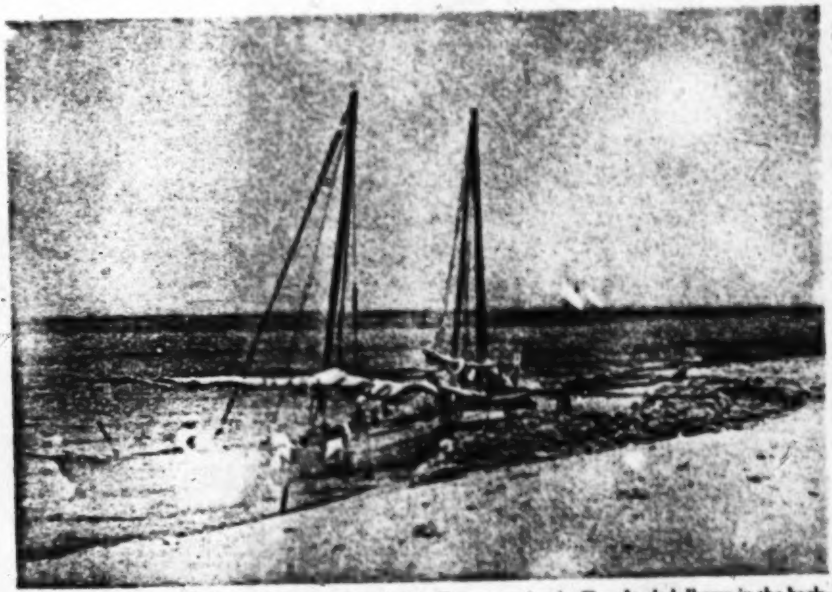

Fig. 15—Unloading hasa from jalbuts on the Ras Tanura peninsula. Two loaded dhows in the background are bringing in more.

the water is warm. On the Persian Gulf coast of Arabia the minimum winter air temperature is in the middle forties, the shallow-sea temperature in the low sixties. From long experience the Arabs have found that they can begin deepwater diving in June and continue until the first week in October. At the start and finish of the season the surface-water temperature is about 85°, but the deep-water temperature is considerably less; the maximum surface-water temperature may exceed 100° in August. Before this main season the *ghaus al-kabir* (great diving), there is a season of about two months, known as the *ghaus al-barid* (cold diving), when smaller boats work the shallower waters near their home ports; during the winter many men go out as "waders" at low tide to pick up what they can just below tide level.

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[3] See also R. LeB. Bowen, Jr.: The Pearl Fisheries of the Persian Gulf, *Middle East Journ.*, Vol. 5, 1951, pp. 161–180. 113

228 656 672 426 On Bahrein and in Kuweit the governments have made reforms in the pearling industry. On Bahrein a pearl diver's debts now die with him; in other places a diver's debts are passed on to his son or brother. The Bahrein government also demands that account books be kept for each diver, and the cash advances are agreed upon at the beginning of the season.

228 However, there has been a drastic change in the Persian Gulf pearling industry. The great depression after World War I and the competition from Japanese cultured pearls dealt the pearl fisheries a serious blow. Twenty-five years ago there were nearly three thousand dhows engaged in pearling in the Persian Gulf; today there are not more than six hundred. In the twenties the east-coast ports of Saudi Arabia probably sent several hundred boats to the pearl fisheries annually; today there are not more than several dozen. In the twenties the value of the Persian Gulf pearl fisheries was more than a million dollars; today it is less than a quarter of a million.

228 464 Thousands of divers and attendants were thrown out of work. In Kuweit numerous pearlers found employment on sailing ships traveling to India and Africa. On Bahrein Island many were absorbed by the rapidly expanding oil industry. In Saudi Arabia oil development came late, and the unemployed pearlers had already been absorbed as fishermen, rock miners, and farmers; in fact, so well adjusted were the Saudi Arabian towns that when the Arabian American Oil Company needed large amounts of labor in 1945, it had to hire Bedouins from the desert. Oil came late to Kuweit also; however, here workers were drawn from the marine industries, since the Kuweit Oil Company paid higher wages than the workers could get as sailors, pearlers, or fishermen.

Oil has thus been able to offer salvation to the lowly coastal worker of the Persian Gulf. A man in debt can now get a job with an oil company and pay off his debt. So effective has this proved that the Kuweit, Bahrein, and Saudi Arabian nakhodas have difficulty in getting men to send to the pearl fisheries, or to man the sailing ships going to India and Africa. However, oil has yet to come to Oman, so that pearlers still leave the Trucial Coast in large numbers, and many Oman dhows from Sur still sail down to Africa.

deftly searches in all the different places where experience 228 has taught him to look for the small glistening things that bring such a high price in the world's market. It is almost impossible for any one to conceal a pearl as he works. He has scarcely enough clothing for such a purpose, and the watchful eye of the captain is hardly off him for a minute. When a pearl is found, if it is small, as most of them are, it is wiped off on to the big toe or the thumb of the diver. As the work progresses, some of the men will have quite a row of little pearls extending perhaps the whole length of their big toe, to which they adhere because they are damp. As soon as the number of these little pearls is sufficient or a really large pearl is found, everything is taken to the captain, who carefully puts all the pearls in a little bag made of red flannel and keeps them safe. When this work is completed, the diving of the day begins. The delay caused by the search for pearls in the catch of the previous day is not usually more than from half an hour to an hour.

The skill required for the labor is small, and outsiders 228 have little difficulty in qualifying as divers even with no 464 previous experience. Stories are told of Bedouins from the desert, who have never learned to swim, starting nonchalantly to dive with the more experienced men. Men of this sort usually get along all right. Occasionally they drown. Boys sometimes start out even at the age of ten to work as cooks and minor helpers, receiving at first a small fixed wage. Later they are promoted to the position of assistants and soon are divers if they so desire. The work, although it calls for little skill, does require much courage and nerve, and to be a really successful diver a good degree of aptitude and energy is essential. The energetic diver who has at the same time a con-

228 tagiously cheerful spirit is prized highly and receives
464 extra good treatment. The season's success, however,
turns only partially on the energy and skill of the men.
228 The fluctuations of the market are pure chance as far as
the men are concerned, and the success of the catch is
an equally incalculable factor. The weather has also to
be considered, for in storms it is impossible to dive, and
the "forty-day northwest wind," so called, is likely to
take a large number of days out of the working calendar.

The pearl banks stretch for miles and miles in the shallow waters of the Persian Gulf. Occasionally pearl-bearing oysters may be found where the water is so shallow that the very low tides of the first and middle of each lunar month leave the bottom of the sea quite uncovered. However, most of the diving is done in water that is at least four fathoms or twenty-four feet deep. Deeper than fifteen fathoms, that is to say ninety feet, no one dives, and the Arabs insist that at greater depth no pearl-bearing oysters are found. Any rocky bottom between these two limits of depths is suitable territory in which to hunt for pearls. Certain banks are noted as affording good hunting, but most of the season's fishing partakes largely of the nature of exploration and guesswork, trying here and trying there in localities where the catch is reported as good. The number of diving boats at work is large, but the territory available is vast and there is no crowding. The banks are scattered along the Arabian coast of the Persian Gulf for perhaps three hundred miles, so the opportunity for each boat is ample.

[1123] These banks are as free as the air. No one exercises any control over them, nor claims the privilege of charging rent for their use. The nominal tax of a diver's share

72 Political troubles became acute some ten years ago or more, and for many years no foreigner was allowed to land on that coast. It was a double pleasure, then, to be invited to visit that part of Arabia four years ago. It* is the one remaining nest of slavery in eastern Arabia and the district is still troublesome at times to the bearers of constituted authority, but nothing of that sort is apparent to the visiting doctor. The rich and the poor alike are most courteous and pleasant hosts. 576

228 461 In this district* the pearl-diving system is the same as in Bahrein, but the men do not work nearly so hard. They set out to work later in the season, although if the temperature of the water were the only element in their decision, they might be at work sooner, for they lie farther to the south and their water warms up considerably before that near Bahrein. They return to the shore oftener and show much less energy in their work. The pearl banks in the region of the Pirate Coast are less rich than the Bahrein banks, and as might be expected, their catch is much less valuable than that of the boats farther north. 511 It is interesting to see that divers on the Pirate Coast live at about the same general level as those in Bahrein. They could not live at a much lower level, for it would mean starvation. The larger receipts in the Bahrein area have as their only result the creation of a much richer class of pearl merchants than the similar class on the Pirate Coast.

567 464 461 Unquestionably it is the slaves who have reduced the standards of what a day's and a season's work ought to be to its present level on the Pirate Coast. Most of these slaves are negroes from Africa. A few are Baluchs from the Makran coast between India and Persia. They do not number over one-half the divers, probably far

*[The Pirate Coast and its capital at Dibai --Analyst]

Maritime Arabs MJ2
Bahrein MZ2

M
less than that, but their attitude of listlessness and in- 567
difference has tended to pull all the rest down to their 414
level. Just why slavery never took root in Bahrein, why 461
the Arabs there never bought slaves to do their diving, B
is difficult to see. It seems such an easy way to get rich. [567]
One reason why Bahrein is a much stronger community financially now than its southern competitor is the fact that slaves have never been brought in to any large extent.

It is a great temptation, this opportunity to have one's M
work done by slaves, and nothing could seem to offer 567
greater profits. The slaves have no rights. They can be punished if they show less diligence than their owner thinks adequate. They receive no wages at all, only such food and clothing as their master sees fit to give them. Arabs are not the only people that have been deceived by this fallacy. We believed it ourselves a hundred years ago. It has been a disastrous policy from every standpoint. Nothing could exceed the indifference and laziness of the average slave under such conditions. The money spent on food and clothing for these slaves brings a smaller return in service rendered than any wages paid in Arabia. Of that much any one is sure who has
watched them work, or rather has watched their very suc- M
cessful efforts to avoid doing any work. Prostitution is 567
commoner on that coast than in any other eastern Arabian 548
community. Slave women are the toys of any man who buys them, and what the Pirate Coast sowed in its treatment of helpless women slaves, it is reaping in an atmosphere of degradation that envelops the entire community from the lowest to the highest.

As passive resisters these slaves are superb. I have M 567
seen one of them, disgruntled by some mistreatment or
insult, simply lie down on the job and no expostulation 158

the dhows leave the banks. These men wander through the fleet 228
in their own boats (usually launches) always trying to get to a 437
first quality pearl before the other brokers hear of it, and always
hoping that the *nakhoda* will not recognize its value. The
broker's paraphenalia consists of a magnifying glass, a small 413
hand balance, weights, and a set of brass screens for grading the
pearls. When pearls are sold on the banks they are ceremoniously
transferred from the captain's red bunting to the broker's.

Regardless of where they are sold, the majority of the pearls 228
go to Bombay, and from Bombay eventually to Paris, the world's 439
pearl emporium. Pearls are usually shipped to Bombay by air. 456
The reason is simple: Usury and insurance are prohibited by the 784
Quran. If the pearls were shipped to India by Arab dhow or
steamer through an Arab agent, there could be no insurance on
the consignment. However, if the pearls are shipped via Trans
World Airline or British Overseas Airlines Corporation, the
pearls can be heavily insured. Thus, the Arabs use a Western
agency to get around the Quranic prohibition. In Bombay, Indian
workers skillfully pierce the pearls with fine bow-driven
drills and string them on silk, graded according to color and
size. The pearls are sold to European dealers in bunches consisting
of a number of strings and generally known as "Bombay
bunches."

When the season has ended and the pearls are sold, the captain 228
deducts the cost of the food and provisions. What is left represents 465
the profit. Of this the owner of the dhow gets one-half; of
the remainder each diver and each attendant gets one share and
the captain two. Most of the dhows leaving Saudi Arabian ports
are small (not over 40 feet) with small crews—usually something
like 6 divers, 4 attendants, and a captain. Thus, each diver
and attendant would get one twenty-fourth (about 4 percent) of
the profits, and the captain would get one twelfth (about 8 percent).
The pearling dhows operating out of Bahrein and Kuwait
are generally much larger than the Saudi Arabian dhows, and
may have crews of 40 or more. The profits of these craft are split
in much the same way as the profits on smaller dhows, but the
captain gets more shares with these larger crews than he does
with the smaller.

ECONOMIC RELATIONSHIPS

228 426 Pearling is a great gamble for everyone concerned. A share may be worth only 50 or 100 rupees if the take has been poor, but on the average a share should net at least several hundred rupees. It must be remembered that a share usually represents a year's earning, since the pearling industry operates on the "debt system." This is not to be confused with the "truck system," for the workers in the Persian Gulf pearl fisheries are not paid in produce. In the debt system the divers and tenders get actual cash advances during the seasons they are out of work, and their families get food and supplies while they dive. They must pay off their incurred debts with their earnings after the pearling season, but somehow they never seem able to get free.

228 426 672 Until recently, a diver who accepted cash advances from a *nakhoda* had doomed himself to diving until death, and unfortunately death might not be an exit, as his debt was simply passed on to his son or brother, who then went on to incur his own debt. Once in debt a diver is prohibited from hiring to another *nakhoda*—he must repay his debt to the man who gave him cash advances. A diver or anyone else who accepts an advance in the pearling industry has sold himself to economic slavery, for the *nakhoda* owns his ability to work, while the man must support himself. Thus, a diver is bound to return to the purgatory of pearling at the *nakhoda's* call. Since Muslim law prohibits interest or usury the debt system effectively gets around this. The *nakhoda* is usually in turn bound to some merchant in the same way, for he has taken cash advances to give to his divers and attendants.

567 465 In Oman the *nakhodas* often hire their labor from a tribal agent, giving the agent an advance of money and rice. In the case of slaves, the agent takes this to the slaves' master; at the end of the season he collects the balance of the slaves' earnings. Thus the slaves' earnings go completely to his master, who in return clothes and feeds him.

228 656 426 On Bahrein Island the Bahrein Government has, at the suggestion of the British, effected many reforms in the pearling industry with respect to the debt system. Hereditary debts have been abolished; pearl divers on Bahrein now take their debts to

Kuwait MI1

K

Negro origin, the descendants of slaves, though not now slaves MA
themselves. Many owners are of Iranian origin. Almost none are 505
Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, 565
the callings open to the low-class Iranian are restricted to portering,
pearling (either as diver or as tender), and sailing. Both
Iranians and Negroes work splendidly, are loyal, competent, and
well disciplined.

As the *nakhoda* class is tied to the merchant by a structure of MA
debt, so also are the sailors tied to the *nakhoda* class in the same 565
way. All deep-sea sailing is paid for on a shares system, and there 426
are no wages. Often the *nakhoda* of the deep-sea dhow has an 465
interest in a pearling vessel (though not now to anything like the 228
same extent as in former years), and the sailor may be bound to 428
him through pearling debts, either his own or inherited. The
more iniquitous practices in the pearling business structure have
long been on the way out, largely because of the excellent example
set at Bahrein, but the debt tradition stands and is almost impossible
to eradicate.

MA

The sailors go to sea because they know no other life, and they 505
make a wretched living by incredibly difficult methods. They 511
have no possessions other than the clothes they stand in, and 342
one or two spare gowns, a good headcloth, and a few sarongs. 291
Their toothbrush is the twig of a tree; their ablutions are made 515
five times daily at a mosque well, or in the sea; they know no 501
shelter and rarely have a bed. The younger seamen, I have noticed, 565
often have no home other than the *suq*, or native bazaar,
where they coil down in their rough cloaks for a night's sleep on a
bench in a cheap coffee shop, or in the sand. At sea, they stretch
out on the deck, beneath the stars, for there is no such thing as
accommodation for the seamen or anyone else in most dhows.
The officers and the more important merchants live on a bench
round the wheel, in the stern of the ship; the seamen lie down
anywhere.

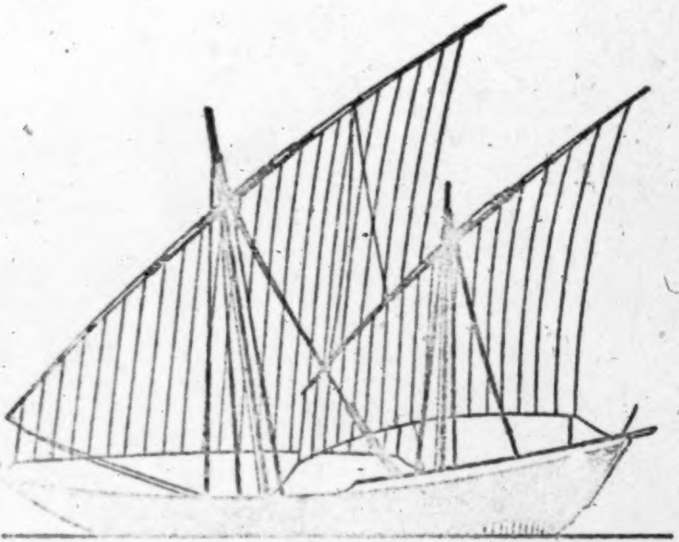
What keeps the seaman a disciplined and more or less con- MA
tented worker is his hope of reward, principally from smuggling 565
or his own ventures, and his ambition to get hold of a tiny shop 554
in the *suq* of his home town. This is an ambition he rarely 165
achieves. His more usual fate is to die young, especially if he be
also a pearl diver.

of Dar es Salaam, loaded her with mangrove poles, and brought 505
her back to Zanzibar again, where the *nakhoda* had ostensibly 565
been trying to assemble passengers and extra cargo for the return 439
to Arabia but in fact had been enjoying a new harem.

Mates are paid by shares, and are, in my opinion, an oppressed 505
class. They carry their own ventures, engage in smuggling on a 565

465 ●
451

[501]



Baggala

small scale — haberdashery, currency, and so forth — and generally keep the ship's books. They may become *nakhodas* of small *booms*, running to the Basra river; but it is unusual for a man from the more dignified deep-sea trades to descend to this. There is no social status about the *nakhoda* of a coastwise water dhow.

Ships are built by shipwrights who employ no naval architects. 396
Both builders and riggers' lofts are unknown. The ships are put 501
together entirely by eye and take the traditional form either of [171]
the double-ended *boom*, or the carved and embellished *baggala*,
which obviously has a considerable ancestry from the Portuguese
galleon.

Kuwait MK1
Zanzibar FM1

that any new crew members in Arab ships joined voluntarily; MA
vessels must not be overmanned, and crew and passenger lists 505
must be provided and in order; ships must be surveyed, and kept 567
seaworthy; and *nakhodas* must be certificated. As for the last, the Z
port officials conduct examinations, and the general principle 656
seems to be that if a man is capable enough to bring a dhow down to Zanzibar, certificate or no certificate, he can also be trusted to sail her away again. But the fee for examination is fifteen shillings, and the Arabs complain about it.

We touched at Zanzibar again after loading in the Rufiji, re- K
embarked our *nakhoda* and took aboard a few Swahili school- MA
teachers as passengers (they proposed to hire an automobile at 439
Kuwait to take them to Mecca), filled the decks with coconuts 505
and cases of soap and vermicelli, and departed toward the Persian Gulf again with the first of the broken weather at the end of the northeast season. We did not await the coming of the true southwest monsoons, for it sets in hard; we sailed direct to Muscat, in twenty-six days.

Muscat was depressed and there was no trade there, not even smuggling. All that changed hands, as far as I could see, was a box of Maria Theresa thalers, enormous Austrian coins minted in London for the Omani and available in Zanzibar at a price less than the exchange rate in Muscat. The Arabs turned everything
to profit and were prepared to sell anything, even the ship. The K
sailors' pastime in the Rufiji was buying lemons — a thousand M.A
for a shilling — and converting them into sherbet, which they 252
hawked in the *suq* at Kuwait throughout the summer.

Our cargo of mangrove poles sold at Bahrein, the ship returned to Kuwait, to lay up inside a coral breakwater until the new season's Iraqi dates ripened and it was time to go out again. At K
Kuwait, when all her people were returned — several relations of MA
the *nakhoda* had dispersed from Zanzibar back to Lamu and 451
Mogadishu to collect debts — a general balance sheet of the 465
whole round voyage was struck, the profits computed carefully, 439
and divided by a system of shares arranged traditionally. It was 505
not a straightforward statement of income and expenditure; I never saw or heard of any piece of Arab seafaring business which was as simple as that. It was all complicated by prior advances,

K MA 451 465 439 505

debts, odd earnings not shared and even odder earnings which were shared, and mysterious complicated procedures, some of which I never did fathom, for the war came, and stopped my investigations.

K MA [595]

The son of the merchant family which owned our dhow, however, told me that her gross profit on the nine-month round voyage was 11,000 rupees, not including the proceeds of the crews' and officers' private ventures. But I think he exaggerated, for the total investment in the dhow was little more than that. But at any rate, the dhow's people were well satisfied and they all, save one, went back to sea with her. The *nakhoda* grew fat throughout the summer, and took a new wife, and a new *boom* for his brother at a cost of 10,500 rupees; and I heard no complaints from the merchants.

K MA 505 465 501 439

As far as I was able to discover, half the gross earnings went to the ship; this was the merchant's share. The cost of the food for the round voyage (which was not much, for all hands lived very simply and fishing lines were the most important equipment in what passed for her storeroom) was deducted from the other half, and the remainder was then divided by shares arranged strictly in accordance with the accepted value of each man's rating aboard. The sailor's share on the voyage which I made was reported to be 135 rupees (about $40), whereof 35 rupees had been advanced. This was little enough for such a long voyage, and though they worked hard at all sorts of things and were ready for any kind of business, I doubt whether a sailor's earnings from other sources amounted to more than 20 or 30 rupees, clear.

K MA 465 505 181

I heard of dhows from Kuwait that season which were distributing less than 100 rupees; according to the Kuwaiti, who had no high opinion of them, the Suri rarely paid out more than fifty. To a sailor whose only home was the sand of the *suq* and his bed the cloak around him, whose wants were few and whose paradise was assured, even 50 rupees may be a vast sum of money. There was, at any rate, contentment throughout the Arab shipping industry as I knew it, and the quiet philosophy I learned among the simple seamen was of great help to me in the days of the long-drawn war which was soon to follow.

228 his great toe completely severed by a large piece of faroush that had slipped and hit his foot as he stood on the sea bottom.

Hasa, known to Americans familiar with native construction in Arabia as "sea rock," is found on the sea bottom in more or less solid deposits, from which a diver pries pieces (Fig. 15). Faroush is much more difficult to mine: it takes at least a day to get a boatload, whereas a crew may get three or four boatloads of hasa a day. Faroush is sold by the square measure, hasa by the cubic measure.

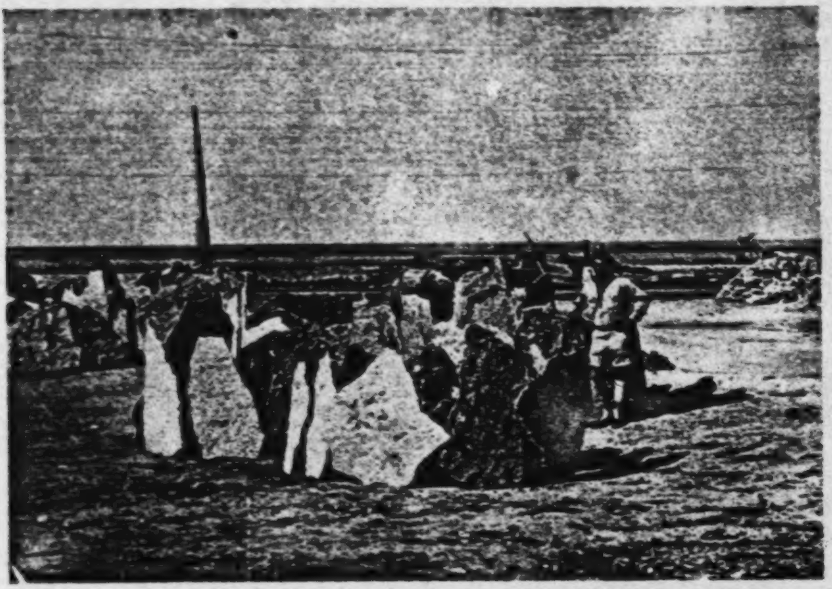


FIG. 14—Author standing by slabs of *faroush* on the shore of Bahrein Island. Faroush is mined near Bahrein in much larger pieces than in Arabian waters. Pile of *hasa* in right background.

228 The rock divers, like the pearl divers, work only in the warmer months.
464 Since they generally work in water that is shallower than the pearl waters
461 and therefore remains warm longer, the mining season is two or three months
longer than the pearling season, which is only four months. The rock divers
do not work constantly, hour after hour, day in and day out, as the pearl
[339 divers do, since each boatload has to be sailed to shore. A small stock pile
317] of faroush and hasa is always maintained in every seaboard town, and most
of its buildings are constructed from these two rocks. Lime is made by burning hasa.

426 The crews mining coral rock work on the "debt system," notoriously
465 exploited in the Persian Gulf pearling industry. Although they are paid good

wages, they are given cash advances and food during the winter and during 421
slack periods. They never seem able to pay off their debts to the dhow 415
owners.

PEARLING

The most colorful marine industry of the Persian Gulf is pearling.[3] 228
Pearling is definitely a seasonal occupation, confined to the months when 132

[501]
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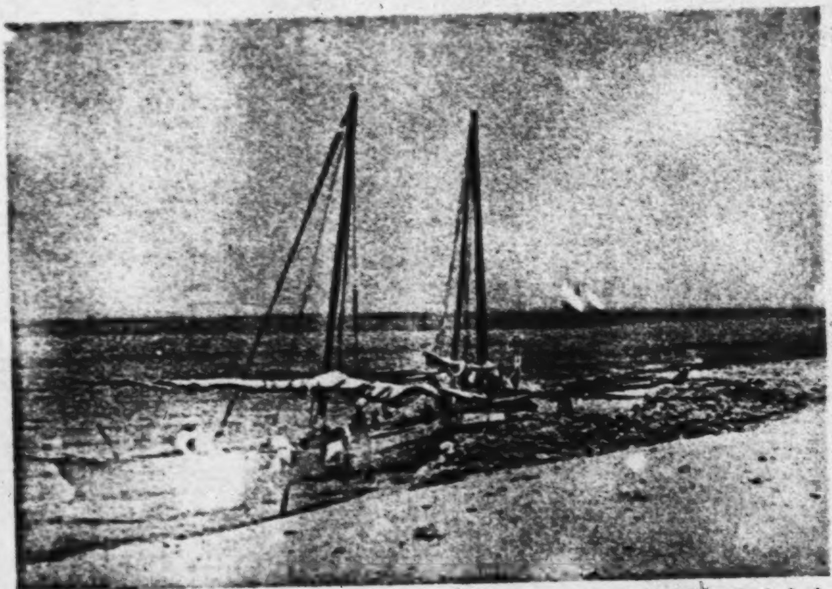

FIG. 15—Unloading hasa from jalbuts on the Ras Tanura peninsula. Two loaded dhows in the background are bringing in more.

the water is warm. On the Persian Gulf coast of Arabia the minimum winter air temperature is in the middle forties, the shallow-sea temperature in the low sixties. From long experience the Arabs have found that they can begin deepwater diving in June and continue until the first week in October. At the start and finish of the season the surface-water temperature is about 85°, but the deep-water temperature is considerably less; the maximum surface-water temperature may exceed 100° in August. Before this main season the *ghaus al-kabir* (great diving), there is a season of about two months, known as the *ghaus al-barid* (cold diving), when smaller boats work the shallower waters near their home ports; during the winter many men go out as "waders" at low tide to pick up what they can just below tide level. 113

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[3] See also R. LeB. Bowen, Jr.: The Pearl Fisheries of the Persian Gulf, *Middle East Journ.*, Vol. 5, 1951, pp. 161–180.

228 all end up in Bombay. The Indians drill, polish, and grade the pearls, and
442 string them on silk; these short strands are known as "Bombay bunches."
439 Before World War II the pearls were sent to India by streamer; today they
509 are usually sent by air from Bahrein, Kuweit, Sharjah, and Dharan. The pearls are usually sold to Indian merchants in these towns, but occasionally the Arabs themselves take the pearls to Bombay.

228 After all the pearls have been sold, the nakhoda figures out the season's
465 profit. The owner of the dhows gets half the profit; the other half is divided among the crew. Most of the pearling dhows out of Saudi Arabian ports are small (not more than 40 feet), with crews of ten -- six divers and four attendants -- in addition to the nakhoda. Each diver and each attendant gets one share in the profits (about 4 per cent); the nakhoda gets two shares, unless he owns the dhow and longboat, in which case, of course, he gets more than half the profit. The number of shares each of the crew, the nakhoda, and the owner get is agreed on at the beginning of the season and may vary from place to place. Many of the pearling dhows out of Kuweit and Bahrein are considerably larger than those out of the Saudi Arabian ports and may have crews of forty or more; on these the nakhoda gets a larger number of shares.

Pearling is a gamble for everyone concerned, from the merchants to the divers. Some seasons are good, some bad; sometimes a boat has bad luck, sometimes excellent luck. A share on a pearling dhow should be worth several hundred rupees, but it may not be worth fifty.

228 Usually a share on a pearling dhow represents a year's wages, since the
426 pearling industry operates under the "debt system" mentioned above (not to be confused with the "truck system" of pearl fisheries elsewhere, in which the divers are paid off in produce). Under the debt system the divers and attendants are given cash advances during the winter season, when they are not working, and their families are given food and supplies while the season is on. The advances are deducted from their calculated shares, so that usually the worker gets little or nothing.

Thus the divers and attendants are perpetually in debt. Once a worker is in debt to a nakhoda, he cannot work for anyone else during the pearling season; this is one of the laws of the industry. He has virtually sold himself into economic slavery to the nakhoda, who has his services and never actually has to pay him anything, whereas he in effect pays the nakhoda in the pearls he produces. However, it should be remembered that the nakhoda is in turn usually in debt to some merchant, who commonly finances numerous nakhodas.

waters from May to September, and why most local Indian craft are 505
drawn up on the beaches. 132

II

Dates are probably as important a factor as the monsoons in maintain- 439
ing the large lateen fleet in the waters of the Indian Ocean. By a lucky co- 505
incidence, the great date crop of Iraq begins to ripen just before the northeast monsoon sets in about October. The great maritime expansion of the port of Kuwait has probably been due in no small part to its proximity to Basra, the port through which most of Iraq's dates go.

Dhows come to Basra for dates from Kuwait, Bahrein, Persia, Oman, India, and even as far away as the Hadhramaut. Starting in the latter part of August and continuing into September, Kuwait deepwater ships are floated from the beaches, where they have rested for several months during the summer, making ready for the run to Basra to pick up dates. The farther the home port is from Basra, the earlier the ships must depart, so that craft from the Hadhramaut must allow a month or more to get to Basra, riding up to the Gulf of Oman on the summer monsoon and then working their way up the Persian Gulf, where the monsoon is not felt.

Almost without exception the date cargo is carried out of Basra on consignment for some merchant; sometimes the destination is known on leaving Basra, but often the consignment is sent to Aden or Mukalla (see Plate 23—bottom) in South Arabia for final shipping instructions from the Arab or Indian export firm shipping the dates. Dates are usually not carried into the Red Sea much past Hodeida in the Yemen in Kuwait ships, although Villiers[14] tells of a Kuwait *bhum* transporting a load of dates as far as Qizan in Saudi Arabia.

In such a manner dates have been leaving Iraq for decades bound for the southern shores—that is until the winter of 1949. In that winter, for the first time in many years, the great date-bearing Kuwait *bhum* fleet failed to appear in its usual strength in the waters along the southern shores of Arabia; only a portion of the usual quota appeared in Aden by the first of 1950. The dates that would ordinarily have come into Aden in Kuwait dhows came down unceremoniously under steam. What caused this abrupt change in the well-established status quo of the dhow trade? The same thing that has wrought so many other radical changes in the economy of the Middle East lately—oil!

Kuwait is actually a city-state with few industries except pearling, fish- 361
ing, and shipbuilding; there are no farms, no date plantations, and only 465

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[14] A. Villiers, SS, p. 366.

361 465 a few scattered Bedouin tribes. The Kuwait Oil Company is now operating in high gear, and has apparently offered so many opportunities for natives that *nakhodas* (captains) have difficulty in getting men to sail their ships at the wages they can offer. Sailors never get any regular wages on a dhow, receiving a share of the earnings of the ship only after the voyage is over. Many sailors have apparently found that it is a comfortable feeling to receive a regular wage every week! It is too early yet to tell whether or not the change is permanent.

439 505 There has also been a noticeable fall-off in date-bearing Arab dhows sailing to India, but apparently for a different reason. Vaidya[18] states that during the 1943-1944 season, presumably for the first time, sixty to seventy per cent of the Arab fleet that usually brought dates failed to appear because of Arab restrictions on the export of wet dates and because of the high prevailing prices of the dates. Thus, this case is not allied to the present situation prevailing in Kuwait, as during the 1943-1944 season dates presumably were not shipped to India by any other means.

However, even if Kuwait is unable to put its *bhums* to sea, the date crop in the future will still probably be carried out of the Persian Gulf in dhows as usual; it will take time to attain a balance again. Whether the port of Sur rises to the challenge or whether some Persian port takes the trade remains to be seen. The Suris from Oman are logical successors to Kuwait, for in times past they have been noted for taking cargoes at lower rates than the Kuwaiti or any other mariners could afford to, and they have a long maritime history.

It is interesting to note that oil activities in other areas in the Persian Gulf have drastically affected the marine activities of other coastal towns. Over ten years ago, the Saudi Arabian ports of Jubail, Qatif, and Darin used to send out over a hundred dhows yearly to join the Persian Gulf pearl fisheries. Now if they send out several dozen dhows it is news; the Arabs who used to dive for pearls now have steady jobs with the Arabian American Oil Company. The same has happened on Bahrein Island. The Bahrein *nakhodas* are no longer able to find a multitude of divers who will accept the wage the *nakhodas* are able to offer; thus the Bahrein pearl fleet is only a shadow of what it was a quarter of a century ago.

439 226 Most but not all Arab dhows load dates first; however, many Omani dhows bring cargoes of dried fish and fish oil, for fishing is particularly good in the waters off Oman, and sharks and large tuna are caught in considerable amounts, both for home consumption and export. Sometimes, however, the Omanis may set out for Africa empty, or with only a partial

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[18] K. B. Vaidya, op. cit., p. 207.

426 banking system, interest, usury, or insurance. The economy of the Arabs is built on a tremendous pyramid of debt which has the lowly sailor, fisherman, farmer, and coolie on the base and a sheikh on top; this system, which may well be called the 'debt system,' operates efficiently and effectively, but has been notoriously overworked in the case of pearling activities in the Persian Gulf.

426 465 At the start, a merchant will finance a *nakhoda* for building a deepwater dhow.[56] Thus the *nakhoda* is the *nominal* owner of the dhow, but he is indebted to the merchant. If the *nakhoda* had enough money to buy a dhow himself, he would finance someone else and become a merchant himself. This arrangement suits the merchants, for if the ship goes down, the *nakhoda* (or his family) must pay back the value of the cargo and the cost of the dhow as well. Thus the merchant has an 'insurance' on his investment. A merchant may have a dozen *nakhodas* so indebted to him.

The *nakhoda*, on the other hand, has all his sailors and crew indebted to him. He never pays them any regular wages, but gives them advances of food and money when they need it. Thus, as we saw above, the sailors have to make the sails and rig a new ship if they are to sail it. Only when the voyage has terminated six months or a year later, and the ship has been beached in the home port, do the sailors get their share of the earnings of the voyage. But by this time many of them have no share coming, as the *nakhoda* usually has advanced them more than their share amounts to, so he must give them another advance; this is to the *nakhoda's* liking, as he then has the sailors indebted to him. Once a sailor owes a *nakhoda* money, the sailor cannot ship with another *nakhoda* until the debt is paid. The sailors pay for only half of what they eat, for when it comes to the final accounting (if such a civilized term can be applied to the figuring), the total food cost is subtracted from the gross earnings.

The *nakhoda* receives about four or five times the sailors' share, while the mate receives about half as much as the *nakhoda*; some members of the crew receive a little more than the common sailors. The shares received by the twenty-seven men eligible for shares on the Kuwait *bhum* on which Villiers[57] sailed in 1939 are as follows:

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	5	1	5
Mu'allim (mate)	3	1	3
Quartermaster	1½	3	4½

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[56] Not everyone can become a *nakhoda*, for the *nakhoda* must come from a family which can pay the debt if the *nakhoda* should be unable to.

[57] A. Villiers, *SS*, p. 425.

426
465

Serang (boatswain)	1½	1	1½
Serang's mate	1¼	1	1¼
Cook	1½	1	1½
Steward (storekeeper)	1¼	1	1¼
Sailors	1	18	18
Total shares			36
Nakhoda's extra 4 and mate's extra 2 shares			6
Net shares for crew's half of dhow's earnings			30

The *nakhoda's* four and the mate's two extra shares are taken from the ship's part of the earnings. On the voyage that Villiers made, the ship grossed 9,600 rupees and spent some 1,500 rupees on foodstuffs; this gave a net earning of 8,100 rupees. Half of this was considered the crew's share for the voyage, so the thirty shares were worth 135 rupees each (after the *nakhoda's* and the mate's extra six shares were deducted from the total shares). The ship's expenses and upkeep, as well as the *nakhoda's* and the mate's extra shares, came from the dhow's earnings; the balance went to the merchant financing the vessel. If we assume that the yearly upkeep of the dhow was 1,000 rupees (which it never would be, as the crew does all the work on their share of the earnings), the owner's share on his investment of 12,500 rupees (the total original cost of the completed dhow) was 2,240 rupees, or approximately eighteen per cent. However, this is probably closer to twenty per cent, as the yearly upkeep probably did not run over 500 rupees. This would not hold up under strict accounting, as no depreciation has been charged off. Also no insurance on hull or cargo was carried as there are few if any Arab insurance firms. However, when Arab craft make return trips from India they usually insure the cargo with an Indian firm.

Villiers[28] estimates that the sailors might have netted twenty rupees extra in their own trading, that the mate might have made several hundred, while the *nakhoda* might have made a thousand rupees in his deals —mostly from Persian rugs and carved chests. Thus the owner received a twenty per cent return on his investment for the year, while the sailors received about 150 rupees ($45.00) then for a year's work. That seems rather unbalanced, does it not?

I have found the same general system of shares applying to pearling and fishing activities as well as to mariners in the Persian Gulf, the Red Sea, and along the coasts of South Arabia. In general, however, it is more

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[28] Ibid., p. 426.

426 clean-cut in Villiers' case, as all the shares of the *nakhoda* and the mate
465 come from the crew's half of the net earnings. On the 240-ton *sambuk El
Wafi*, which I boarded in Aden in 1950, the shares were as follows:[89]

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	4	1	4
Serang (mate)	2	1	2
Sukhani (quartermaster or helmsman)	1½	3	4½
Muqaddam (boatswain)	1¼	1	1¼
Katib (clerk)	1½	1	1½
Wakil (steward)	1¼	1	1¼
Bahri or *mallah* (sailors)	1	33	33
Total shares			47½

In India some crews are paid on a salary basis, but many others work on a share basis. However, in India the owner takes one-third of whatever the ship earns. Then the craft's expenses while she was at sea and the supplies for the crew are deducted from the remaining two-thirds; the remainder is then divided among the captain and crew according to shares.[90] By dividing the profits in this manner the Indian owner gets about a quarter less than the Arab, while the Indian crew gets about ten per cent more.

471 The largest importer and exporter in Aden, and probably the whole
426 Gulf of Aden for that matter, is A. Besse and Company, operated by a
465 shrewd Frenchman, Mr. Antone Besse. Among Besse's various holdings
in the Middle East are twelve dhows, all registered in Aden. The *El Wafi* was one of the twelve *sambuks* owned by A. Besse, and operated in the Gulf of Aden and the lower Red Sea. On the average these dhows made four trips a month. The *nakhoda* was given advances, which he in turn gave to the crew, before each trip. After four trips the gross return for

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505 [89] It will be noted that the Arabic names in Villiers' list of the members of the crew on a Kuwait
104 *bhum* and in my list of the members of the crew of an Aden *sambuk* are not the same; however,
114 this does not mean that either is necessarily wrong. The Arabic names on my list were checked from three independent sources in Aden, and my informants in Aden recognized Villiers' *mu'allim* as the word the Kuwaiti used for 'mate.' Villiers indicated on his list 'quartermaster' but did not give the Arabic for the word. The Arabic word that I found in use in Aden for this member of the crew was *sukkani*, which comes from *sukkan*, the Arabic for 'rudder.' Thus it would seem that the more proper translation of the word is 'rudder-man' or 'helmsman,' although his position on the dhow is really that of 'quartermaster.' The word *muqaddam* is the word commonly used on land to refer to a 'headman' who is the leader of any other group of working-men. However, on a dhow the *muqaddam* is the man who superintends the letting go and the weighing of the anchor, so the translation of the word when applied to seafaring men is properly 'boatswain.' The important fact evident from the two lists is that there is always a consistency in the top officers of a dhow—there are a captain, a mate, three quartermasters (or helmsmen), and a boatswain, irrespective of the Arabic name by which they are known.

[90] K. B. Vaidya, op. cit., p. 41.

the cargo the dhow had hauled was figured and the cost of the food con- 421
sumed by the officers and crew was deducted, giving the net earning of 455
the dhow. One-half belonged to the crew and was divided into forty-seven 471
and one-half shares as shown above. The other half belonged to the owner, and represented his return on his investment; the owner had to maintain the dhows from his half of the earnings. As we saw above in the case of the figures presented by Villiers, the owner has little to deduct from his share of the ship's earnings, so his return on his investment is considerable. It is little wonder that Mr. A. Besse was recently able to give Oxford University a contribution of £2,000,000!

Over one hundred years ago, the French Admiral F. E. Paris spent con- 477
siderable time in the waters around Muscat and wondered how Arab ships could at that time compete with the more efficient European sailing ships. Paris summed up his conclusions as follows:

> . . . les Arabs qui les montent habitués au retour périodique des moussons, n'exécutent, en general, qu'un voyage par an . . . [ils] entendent bien le commerce; malgré cela, ils sont rarement employés par les Europeans . . . et, comme ils ne prennent que de très-faibles cargaisons, ce n'est que grâce à l'extrême économie des Arabs qu'ils peuvent servir pour le commerce.[62]

Only a decade ago, one hundred years after Paris, men of other lands were still wondering how an Arab sailing fleet could possibly survive in the present era of oil and steam; to satisfy his curiosity Alan Villiers dedicated a year of his life to sailing with the Arabs in their dhows. Villiers has summed up the reasons for the survival of the dhow fleet as follows:

> One reason—perhaps the chief—why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and his vessel pays practically no port dues.[63]

While in Aden in 1950, the writer investigated the intriguing prob- 505
lem of dhow economics, as applied to the coastal craft operating around

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[62] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra–Européens* (Paris, Bertrand, [1841]). p. 9. '. . . the Arabs who man them, accustomed to the periodic reversal of the monsoons, carry out, in general only one voyage a year . . . they understand commerce well; in spite of that, they are rarely employed by Europeans . . . and, as they carry only very poor cargoes, it is only because of the extreme economy of the Arabs that they can be of use for commerce.' 113

[63] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 400-401.

505 craft on the west coast of India engaged in coastal trade over the one thousand-mile coastline. These vessels averaged only about forty tons and carried on the average eight-man crews. It is extremely interesting to note that Vaidya[88] concluded that these vessels never made voyages to ports over four hundred to five hundred miles away, always staying within a five hundred-mile radius of their home ports. The only vessels that made longer trips were the larger craft from the Gulf of Cutch and the Sind coast, these craft carrying Indian trade to Africa, Arabia, and the Persian Gulf. Thus in India the same economic balance that is found in the Gulf of Aden governs the coastal trade. These coastal craft would rather return home in ballast than travel out of their arbitrary 'zone' for a cargo.

479 Admiral Paris thought that the dhows could exist in the face of more efficient European sailing ships only because of the extreme economy of
465 the Arabs. Villiers thought that the main reason the deepwater dhow
505 could still exist in large numbers in the present day of steam was in the main because of the date-storehousing ability of the dhow, which did not tend to flood the market with dates. However, as we have seen above, the 1949 crop of dates entered Aden under steam, rather than on Kuwait dhows.

No, the answer to the question is of a more fundamental nature than either Paris' or Villiers' reason. It is this writer's opinion that the main and only reason why deepwater dhows can survive in this day and age is the system of sailors' wages—the 'debt system.' The Arab capitalists' philosophy is 'Get a man in debt and then never pay him enough to get out of debt.' Certainly this is true about the deepwater Arab craft that sail from the Persian Gulf and the Gulf of Oman to Africa; the crews are paid once a year, so that by the time they do receive their pay the advances made to them usually consume most of their wage. This would tend to be less true if the sailors were paid more frequently. It is interesting to note that A. Besse operates his coastal dhows under the debt system and shares, paying off only once a month and giving out liberal advances in between to keep the sailors in debt.

However, this is not the most important factor keeping the large number of coastal craft operating in areas like the Persian Gulf, the Gulf of Aden, the Red Sea, and the west coast of India. These coastal craft provide a very valuable service by moving cargo in small amounts to ports not usually visited by steamers; steamers find it uneconomical to make short hauls of small cargoes. However, what may be considered a small cargo for a steamer may fill several dhows. In many instances these coastal craft furnish the only transportation to many small off-the-trac ports.

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[88] Ibid., p. 103.

craft furnish the only transportation to many small off-the-track ports. In addition to this it must be remembered that the dhow (or other native 502
coastal craft) can navigate shallow harbors and creeks, while a steamer could not get closer than several miles. Thus there will always be a place for these short range coasters. However, the future of the deepwater dhow is another question.

The debt system has worked for centuries to the economic advantage 426
of those financing the dhows, and to the economic disadvantage of those 465
working on them. It has been impossible for the sailors to break away, as 505
they can never work for another *nakhoda* when in debt to one. There is only one way to break away, and that is to pay the debt. Becoming a farmer or a fisherman does not help, as they usually operate under the debt system also.

On its face in such a financial set-up the merchant has everything to gain and absolutely nothing to lose. In the case above (where the shares, and thus the sailors' wage, were worth about 150 rupees and the merchant made eighteen per cent on his investment on the dhow), if the dhow had made only one-half of what it had, the merchant would still have received about ten per cent on his investment, but the poor sailors would have received only 75 rupees ($22.50) as a year's wage. Thus the dhow can compete against steam only at a sacrifice of the unfortunate economic slaves sailing the dhow. The dhow sailors do all the stevedoring, maintenance work, and sailing for their lowly share of the dhow's earnings; if the sailors received a decent wage (even if only on Eastern standards), the deepwater dhow could not stay afloat as a cargo vessel. Coastal craft operating short distances do pay higher wages on the average than the deepwatermen.

However, the advent of the large oil companies in the Middle East has provided a means wherein the sailors can escape from the bonds of economic slavery. By making jobs which pay good money (on Eastern standards) dhow sailors are able to free themselves of their debts and become free men. We have seen above that the oil companies in Saudi Arabia and on Bahrein Island have decreased the number of boats the pearl fisheries can send out, as they cannot get divers to work for the wage they can offer. Kuwait has long been able to keep a large deepwater cargo fleet of *bhums* on the waters around the Indian Ocean because Kuwait had a surplus of cheap labor—there was little else to do in Kuwait besides work in marine activities. Now that the Kuwait Oil Company has made jobs available to the local Arabs, the cheap labor market is gone for the Kuwait *nakhodas*. Thus as the standard of living is increased and cheap labor

426 becomes no longer available, the deepwater dhow is doomed. The dhow
465 cannot operate in competition with steam if it has to pay the sailors re-
505 spectable wages; that is, as long as the merchants demand one-half of the
dhow earnings.

511 While traffic in human cargo is virtually a thing of the past, the dhows that coast along the Arabian, African, and Indian shores still have slave crews on them. Although not owned bodily, the crews are bound economically to their masters, the *nakhodas,* while the *nakhodas* themselves are economic slaves of the merchants. But, while the crews get little actual compensation when the pay-off finally comes, they are happy and well-fed and have known nothing else. Allah is compassionate, and there is always a Paradise waiting for their poor souls!

From the proceeds of the season's catch one-fifth is 427
turned over to the owner of the boat as rent for its use, 465
and from the remainder the season's expenses for food, 228
water and the like are deducted. The money that is left 466
represents the profits of the season. Each diver receives an equal share of this; each assistant two-thirds of a share. The captain, who has done no diving but has superintended the season's campaign, receives a diver's share, as does the sheikh of the town in some instances, this being the government tax upon the industry.

This seems a good system. In theory it could hardly be improved, but in practice it could hardly be worse.
The divers cannot read or write, so they have no way [212]
of knowing whether or not their accounts are correctly kept. They may not assist in, or even witness, the process of sale, so they have not the slightest control over the captain, nor any means of protecting themselves from dishonesty on his part. The captain himself is between the upper and nether millstones, for the only way he can rent a diving boat is by promising to sell his pearls to the owner of that boat, and from this owner he may receive not over fifty per cent of their market price. Even this reduced price the divers do not receive undiminished, for the captain enriches himself privately at their expense before the sale is reported. Then as if matters were not bad enough, almost without exception the men are in their captain's debt, and remain so throughout their lives.

The fact that nearly all the divers are in debt is partly 426
their own fault. When a man begins to dive, he could [465]
avoid borrowing money if he were at all determined to do
so. The diving season lasts only five months at the out- 466
side, and the season's proceeds may be sufficient to live on for the whole year with economy and care. If they

5: Harrison D-4 (1912-1924) 1924 M1 Middle East
Maritime Arabs M

466 body and soul. The one redeeming feature of the system
426 is that debts are not transmissible from father to son and theoretically each boy starts out with a clean slate, but too often the filial loyalty of the son is appealed to and he assumes his father's debts. This plan allows the old man to retire from his life of hardship. Nothing suits the captain better, for thus the boy is deprived of his only chance to keep free from the slavery that has bound his father.

465 But in spite of its financial drawbacks the work has a great fascination for the Arab, and this is largely because of its element of chance. The Oriental is an inveterate gambler, and the Arab is no exception. Some years the reward of an individual diver may be next to nothing. Another season he may make a thousand *rupees,* or about three hundred and fifty dollars. Over night the whole aspect of the season may change. A pearl worth fifty thousand *rupees* may be discovered at any time. The largest pearl sold locally during the past ten years brought one hundred and twenty thousand *rupees.* Arabs tell of boats whose divers have cleared over two thousand *rupees* or more in a season, but such mythical individuals are hard to find. It is far easier to find the man who has failed to make two *rupees.* However, to do the industry justice, such individuals are rare also. In fair seasons the average must lie somewhere between three hundred and seven hundred *rupees,* or one hundred to two hundred and fifty dollars.

465 At the end of the season the profit, such as it is, is re-
517 ported and the money divided. The divers each receive their share, and the assistants each two-thirds of a share. Men in debt receive a more or less liberal allowance, and the town is filled with rejoicing divers who have just re-

turned from four months or more of exhausting work, 465
during which time they have been half starved and have 517
had no opportunity of finding enjoyment and pleasure,
legitimate or otherwise. The result[1] is precisely what 435
might be expected. Persian rugs in the bazaar go up 517
to twice their proper price as does anything else that the divers may fancy. Meat reaches the highest price of the year, and the same is true of fish, which food the divers enjoy above everything else. Gambling is all but universal. Immorality flourishes. This state of affairs lasts a month, perhaps two months. Then things gradually settle down into the regular winter stagnation until the next diving season.

The same thing happens on a smaller scale when the 517
season opens. Advances are made to the men. Feasts 288
are held. There is much good fellowship and coöpera- 465
tion as the preparations for the season are completed. The chanting of singers can be heard late into the night. The money advanced by the captains makes a great show as it is spent. Strangers come in from far and near to go out and dive with the local men, and the city wears such a gala appearance as it scarcely puts on again till the next season.

It is thus that an astonishingly attractive tinsel surface 565
is maintained over an industry and a manner of life that 228
even for Arabia are bitterly sordid and exhausting. The pearl diver's life is one of poverty, hard and cruel. In a bad season it is with difficulty that he gets enough to eat. His lot is distinctly worse than that of the date cultivator.
Diving wrecks the health as no other Arabian occupation 228
wrecks it. The high pressure of the water at great depths 164
frequently bursts the ear drums, and it is a safe conjecture that no community of equal size anywhere can show

[1] [of divers returning with their wages --Analyst]

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466 **LABOR RELATIONS**--respective rights, privileges, and powers of employers and employees; hiring and firing; tenure of employment; instruction and supervision; promotion and retirement; pension plans; working conditions (e.g., hours, hygienic conditions, safety provisions, recreational facilities); prevalence and types of forced labor; indentured labor; regulation (e.g., labor legislation); etc. See also:

Business and industrial organization	47	Slavery	567
Domestic servants	357	Bride-service	583
Peonage and serfdom	566	Taxation through labor levies	651
Prison and penal labor	697	Social insurance	745
Military labor battalions	708	Vocational training	874

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2

Kuwait MI 1

K MA 438 439 505

his vessel pays practically no port dues. His dates can therefore be warehoused in the dhow, until the market can easily absorb them.

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The dhow trade is "native" trade, a stubborn plant which has been growing a long, long time. Nearly all the cargoes carried in dhows are for the native bazaars, and almost never for European account. Much of the cargoes consists of goods which the dhow captain himself, or some merchant or merchants travelling with him, sells for his own profit. The dhow is a peddler, as well as a carrier; a storehouse, as well as a ship; a means of livelihood to travelling merchants, as well as to her crew proper. Basra dates, though the most important outward cargo,[1] are only one source of revenue: there are a host of others, not necessarily always legitimate.

K MA [245] 456 471 784 466

Kuwaiti owners of date plantations on the nearby Basra river play a considerable part in the financing of deep-sea dhows, though in most cases the captains, called *nakhodas*, are at least the nominal owners. It suits the merchants well that the *nakhodas* should regard themselves as the owners, for this provides them with a cheap form of insurance. If the dhow be lost it is the *nakhoda's* loss, and not the merchant's, for the poor captain must pay back not only the value of the dhow but the advance of freight given him to finance his voyage. Since Islam forbids all forms of ordinary insurance, this arrangement is to the merchant's liking. The *nakhodas* must accept it, for in most cases there is no other way by which they can acquire a big dhow.

In Kuwait, immediately prior to the outbreak of World War II, there was beginning to be some restiveness about this, and an association of the *nakhodas* had the temerity to issue its demands upon the merchants. These included payment of demurrage when unduly delayed at the loading berths in Basra (a dhow might be kept for weeks waiting for her cargo), a sliding scale of freights for different ports instead of the customary flat rate of 1.5 or 2 rupees a package regardless of destination, liability for the return of advances to cease with the loss of the ship, two competent officers for every seagoing dhow, and so forth. The demands represente

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439 ship's own account and peddled to best advantage. The merchants have a substantial share in the dhow's earnings, apart from the sailor's own ventures, which are limited to what they can stow in a sea chest on the poop. As far as I was able to discover -- and I was more than twelve months sailing in deep-sea dhows -- the freight from the dates, on the typical African voyage, is used to finance a cargo of salt from Aden and to purchase odds and ends which might earn a profit in the bazaars of the Benadir coast and
MA Kenya Colony. At the same time, the dhow carries all the passen-
184 gers she can prevail upon to make a voyage, anywhere, for the Arab of Oman, and the Hadhramaut in particular, is an inveterate wanderer, and every dhow is a passenger vessel by the mere possession of deck enough to lie upon.

The salt is sold in the best market that offers between the Hadhramaut coast and Zanzibar. At the same time, the nakhoda does what trading he can in anything which he knows, from past experience, will command a market. The average dhow never leaves the Gulf without at least some carpets, allegedly Persian but generally of either Italian or English origin, which are used both as trade and as bribes. Cooking stones, ghee, live sheep, cows, sacks of rice and flour, dried fish, haberdashery of all sorts, brassware, cheap enamelware, Arab confectionery -- all these may be aboard, either as ship's ventures or as the crew's, generally the latter.

Every man of the crew concentrates on goods which can be bought cheaply in the free port of Aden, adulterated if possible in transit, and sold to the Somali or Swahili shopkeepers whose little stores abound in every port along the coast of East Africa, from Haifun in the north (which the Italians called Dante) to Mikindani in the south, which is about as far south as the Arabs sail in these days. Only Indian dhows go further, to Madagascar and the Comorin Islands. Gaily coloured turbans of the correct style

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426 466 are not, work can be found to tide over the winter months. That, however, is not the usual course of events. The boy who has five hundred *rupees* in his pocket for the first time in his life is eager to have a good time. Inside of a month or two all the money is gone. The captain encourages this procedure, and assures the boy that he will gladly lend him any amount desired. The one thing that the captain desires is to lend this new diver some money, and his zeal to make himself accommodating and friendly is sometimes quite ludicrous. With most of his new men, unfortunately, there is little difficulty. The season's proceeds are gone inside of a few weeks, and before the winter is over, the diver is in debt for an amount equal to the sum he earned, or quite possibly even greater.

The diver is now a slave for the rest of his life. It is probably easier for a negro slave on the Pirate Coast to escape than it is for a Bahrein diver to regain his freedom. As long as he is in debt he cannot change his employer, no matter how badly he is treated, nor can he leave the town except under bonds to return before the diving season begins. And he never will be able to get out of debt. He cannot read or write. There is no witness to the transactions that take place between the captain and himself. It is the recognized thing for divers to receive a loan of rice when the season begins, so that their families may have something to eat while the head of the house is away. The sum written into the books is regularly about fifty per cent greater than the market price of the rice. If necessary, entirely false entries are written in. The upshot of the matter is that these men never get out of debt, not one in a thousand of them. In seven years' residence in Bahrein, I have never yet met a diver

5: Harrison D-4 (1912-1924) 1924 M1 Middle East
Maritime Arabs MH2

who had "escaped from the account book," as the Arabs put it. 466

The amount that a season's work brings in is now a matter of indifference. However great it may be, all that happens is that the sum is written to the diver's credit on the books, and he is given an advance when he asks for it and the captain is willing to allow it. There are certain times during the year when it is the custom to give these advances—the beginning and the close of the diving season and once or twice during the idle months. A good season means somewhat more liberal advances and a bad season smaller ones. The diver, however, is absolutely at the captain's mercy in all this. As a matter 511
of fact he gets in ordinary years an amount that is sufficient for life, and a more comfortable life than that of the Bedouin. The diver's standards of life, however, are considerably below those of a date gardener in a good oasis. It is to the captain's interest, of course, to have 466
his men more or less well fed and satisfied, and to have 426
the glamour of pearl diving maintained so that others will be attracted to the work, so a great show is made of calculating the season's receipts and the rare man who is not in debt really does get a fairly liberal reward for the season's exhausting labor. The crucial point, of course, is the law that prevents a mistreated and dissatisfied diver from changing his employer or from changing his residence. The captain could afford to give his men an amount that would allow them a considerably better mode of life. Doubtless if public sentiment becomes too threatening, he will do so. The thing he will not do is to consent to any alteration of the law that at present delivers the debtor into his hands,

466 426 body and soul. The one redeeming feature of the system is that debts are not transmissible from father to son and theoretically each boy starts out with a clean slate, but too often the filial loyalty of the son is appealed to and he assumes his father's debts. This plan allows the old man to retire from his life of hardship. Nothing suits the captain better, for thus the boy is deprived of his only chance to keep free from the slavery that has bound his father.

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2. Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2

Kuwait MI1

MA 471 426 565 When a deep-sea dhow is built, at least some of the money is put up by the *nakhoda* himself and his family. It is the first essential of the *nakhoda* that he should be from a family of standing in the community, which will pay its debts. Just why such families cannot finance a dhow by themselves I was unable to discover, but the Arab, apparently, has no objection to carrying on business under a cumbersome structure of debt. The merchant, backed by the Sheikh or the ruling family, backs the *nakhoda's* family, who support in turn a trusted and experienced member to take command of the dhow.

MA 565 871 857 It is customary for the boys in such families to go to sea while very young, but they never work as sailors. They are always privileged: no sailor can become a deep-sea *nakhoda*, since obviously if his family is of standing, he would never serve before the mast. The children sail with him sometimes from the age of six or seven, though not regularly. They will make one or two long voyages, looking on and learning but not actually doing anything; then they will remain at home a year or two before going out again. They take command very young. Schooling, at least in 1939, was normally restricted to the local Koranic schools, and rarely occupied more than three months in the year. Only merchants' sons went to the colleges of Iraq, Egypt, and Syria.

MA 565 554 505 Gradually the head of a *nakhoda's* family may attain the status of a lesser merchant himself, though his merchandise is generally limited to the wherewithal to build ships, which comes up in his own dhows from the Malabar coast. But a *nakhoda* himself almost never becomes a merchant, and a merchant's son never becomes a *nakhoda*. Nevertheless, the profession of conducting deep-sea dhows about the waters of the Indian Ocean is a highly respected one, and the shipmasters of Kuwait are, on the whole, a very competent and knowledgeable class, though MA [487] few of them can practice much astronomical navigation. Even their long voyages down to Zanzibar or to Calicut are coasting, really down with one monsoon, and back with the other, almost always in sight of land. Their real ability consists in their local knowledge, both of ports and trade.

K MA 505 565 In Kuwait, in 1939 — as now — there were upwards of 10,000 qualified deep-sea sailors. An astonishingly high proportion is of

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clean-cut in Villiers' case, as all the shares of the *nakhoda* and the mate come from the crew's half of the net earnings. On the 240-ton *sambuk El Wafi*, which I boarded in Aden in 1950, the shares were as follows:[illegible]

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	4	1	4
Sereng (mate)	2	1	2
Sukkani (quartermaster or helmsman)	1½	3	4½
Muqaddam (boatswain)	1¼	1	1¼
Katib (clerk)	1½	1	1½
Wakil (steward)	1¼	1	1¼
Bahri or *mallah* (sailors)	1	33	33
Total shares			47½

In India some crews are paid on a salary basis, but many others work on a share basis. However, in India the owner takes one-third of whatever the ship earns. Then the craft's expenses while she was at sea and the supplies for the crew are deducted from the remaining two-thirds; the remainder is then divided among the captain and crew according to shares.[illegible] By dividing the profits in this manner the Indian owner gets about a quarter less than the Arab, while the Indian crew gets about ten per cent more.

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The largest importer and exporter in Aden, and probably the whole Gulf of Aden for that matter, is A. Besse and Company, operated by a shrewd Frenchman, Mr. Antone Besse. Among Besse's various holdings in the Middle East are twelve dhows, all registered in Aden. The *El Wafi* was one of the twelve *sambuks* owned by A. Besse, and operated in the Gulf of Aden and the lower Red Sea. On the average these dhows made four trips a month. The *nakhoda* was given advances, which he in turn gave to the crew, before each trip. After four trips the gross return for

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[illegible] It will be noted that the Arabic names in Villiers' list of the members of the crew on a Kuwait *bhum* and in my list of the members of the crew of an Aden *sambuk* are not the same; however, this does not mean that either is necessarily wrong. The Arabic names on my list were checked from three independent sources in Aden, and my informants in Aden recognized Villiers' *muʿallim* as the word the Kuwaiti used for 'mate.' Villiers indicated on his list 'quartermaster' but did not give the Arabic for the word. The Arabic word that I found in use in Aden for this member of the crew was *sukkani*, which comes from *sukkan*, the Arabic for 'rudder.' Thus it would seem that the more proper translation of the word is 'rudder-man' or 'helmsman,' although his position on the dhow is really that of 'quartermaster.' The word *muqaddam* is the word commonly used on land to refer to a 'headman' who is the leader of any other group of working-men. However, on a dhow the *muqaddam* is the man who superintends the letting go and the weighing of the anchor, so the translation of the word when applied to seafaring men is properly 'boatswain.' The important fact evident from the two lists is that there is always a consistency in the top officers of a dhow—there are a captain, a mate, three quartermasters (or helmsmen), and a boatswain, irrespective of the Arabic name by which they are known.

[illegible] K. B. Vaidya, op. cit., p. 41.

the cargo the dhow had hauled was figured and the cost of the food consumed by the officers and crew was deducted, giving the net earning of the dhow. One-half belonged to the crew and was divided into forty-seven and one-half shares as shown above. The other half belonged to the owner, and represented his return on his investment; the owner had to maintain the dhows from his half of the earnings. As we saw above in the case of the figures presented by Villiers, the owner has little to deduct from his share of the ship's earnings, so his return on his investment is considerable. It is little wonder that Mr. A. Besse was recently able to give Oxford University a contribution of £2,000,000! 426 465 471

Over one hundred years ago, the French Admiral F. E. Paris spent considerable time in the waters around Muscat and wondered how Arab ships could at that time compete with the more efficient European sailing ships. Paris summed up his conclusions as follows: 477

> . . . les Arabs qui les montent habitués au retour périodique des moussons, n'exécutent, en general, qu'un voyage par an . . . [ils] entendent bien le commerce; malgré cela, ils sont rarement employés par les Europeans . . . et, comme ils ne prennent que de très-faibles cargaisons, ce n'est que grâce à l'extrême économie des Arabs qu'ils peuvent servir pour le commerce.[61]

Only a decade ago, one hundred years after Paris, men of other lands were still wondering how an Arab sailing fleet could possibly survive in the present era of oil and steam; to satisfy his curiosity Alan Villiers dedicated a year of his life to sailing with the Arabs in their dhows. Villiers has summed up the reasons for the survival of the dhow fleet as follows:

> One reason—perhaps the chief—why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and his vessel pays practically no port dues.[62]

While in Aden in 1950, the writer investigated the intriguing problem of dhow economics, as applied to the coastal craft operating around 505

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[61] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra-Européens* (Paris, Bertrand, [1841]), p. 9. '. . . the Arabs who man them, accustomed to the periodic reversal of the monsoons, carry out, in general only one voyage a year . . . they understand commerce well; in spite of that, they are rarely employed by Europeans . . . and, as they carry only very poor cargoes, it is only because of the extreme economy of the Arabs that they can be of use for commerce.' 113

[62] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 400-401.

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II

At first glance, the whole deep-sea trade in dhows seems unorganized and almost unregulated. In point of fact, it is very well organized indeed, and has a tradition going back, probably, some thousands of years. There is no association of dhow owners in Arabia as there is a Country Craft Organization on the west coast of India, for the Arab of today is too inherently disunited and fiercely individualist to make this type of co-operation possible. But he can organize his own trade very well, nevertheless. The typical wealthy business family of Kuwait maintains offices, almost always managed by sons of the house who frequently rotate on the circuit, in all the more important centers of Arab coastal trade. The head office is at Kuwait or perhaps Basra, with branches at Aden (in the Crater, not at Steamer Point), Bombay, possibly one other west coast of India port, and Mukalla. Where there is not an actual branch of the family conducting business on a permanent footing, there is either a trusted agent (probably a relative), or one of the younger sons sent in the trading season to watch the family interests. This, for instance, is done at Berbera, in British Somaliland, which, when times are good, can absorb a surprising quantity of Iraqi dates carried there in dhows. The agent or family member is primarily responsible for the collection of debts — always a problem in a trade which is carried on without banking. A family carrying on business on such a scale will have a finger in perhaps a score big dhows, all nominally "owned" by their own *nakhodas*. The cash resources of some of these families must be enormous, and behind them stands the Sheikh of Kuwait, who was a wealthy man even before oil was discovered in his territory.

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505 craft on the west coast of India engaged in coastal trade over the one thousand-mile coastline. These vessels averaged only about forty tons and carried on the average eight-man crews. It is extremely interesting to note that Vaidya[88] concluded that these vessels never made voyages to ports over four hundred to five hundred miles away, always staying within a five hundred-mile radius of their home ports. The only vessels that made longer trips were the larger craft from the Gulf of Cutch and the Sind coast, these craft carrying Indian trade to Africa, Arabia, and the Persian Gulf. Thus in India the same economic balance that is found in the Gulf of Aden governs the coastal trade. These coastal craft would rather return home in ballast than travel out of their arbitrary 'zone' for a cargo.

477 Admiral Paris thought that the dhows could exist in the face of more
465 efficient European sailing ships only because of the extreme economy of the Arabs. Villiers thought that the main reason the deepwater dhow
505 could still exist in large numbers in the present day of steam was in the main because of the date-storehousing ability of the dhow, which did not tend to flood the market with dates. However, as we have seen above, the 1949 crop of dates entered Aden under steam, rather than on Kuwait dhows.

No, the answer to the question is of a more fundamental nature than either Paris' or Villiers' reason. It is this writer's opinion that the main and only reason why deepwater dhows can survive in this day and age is the system of sailors' wages—the 'debt system.' The Arab capitalists' philosophy is 'Get a man in debt and then never pay him enough to get out of debt.' Certainly this is true about the deepwater Arab craft that sail from the Persian Gulf and the Gulf of Oman to Africa; the crews are paid once a year, so that by the time they do receive their pay the advances made to them usually consume most of their wage. This would tend to be less true if the sailors were paid more frequently. It is interesting to note that A. Besse operates his coastal dhows under the debt system and shares, paying off only once a month and giving out liberal advances in between to keep the sailors in debt.

However, this is not the most important factor keeping the large number of coastal craft operating in areas like the Persian Gulf, the Gulf of Aden, the Red Sea, and the west coast of India. These coastal craft provide a very valuable service by moving cargo in small amounts to ports not usually visited by steamers; steamers find it uneconomical to make short hauls of small cargoes. However, what may be considered a small cargo for a steamer may fill several dhows. In many instances these coastal craft furnish the only transportation to many small off-the-trac ports.

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[88] Ibid., p. 103.

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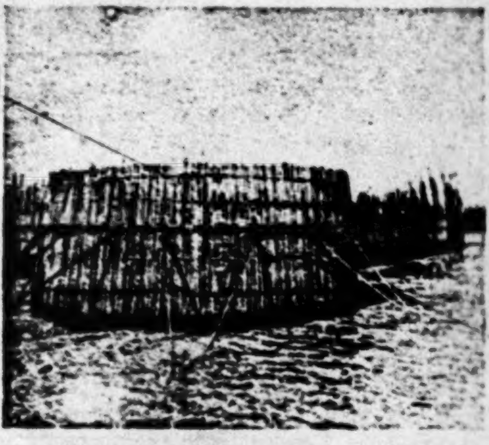

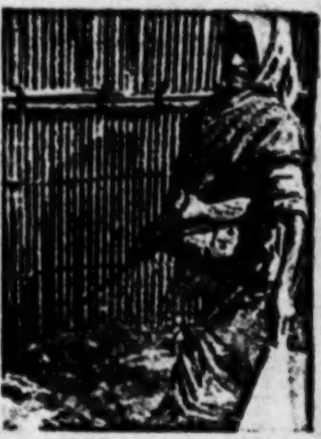

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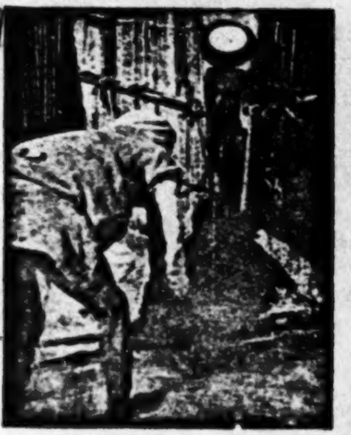

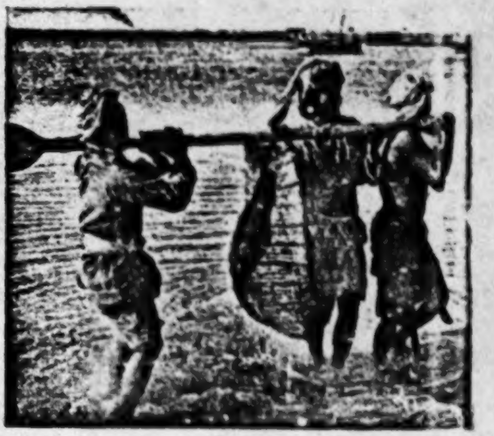

FIG. 8 (upper left)—The stockade, or primary enclosure, of a fishweir, encircled with rope and lashed down to prevent large fish from breaking out.

FIG. 9 (upper right)—Working around the edges of the enclosure with a fine-mesh hand net. Note the long burlap shirt, *frequently* worn by fishermen in colder weather.

FIG. 10 (lower left)—Transferring the fish from the hand net into a palm-leaf basket. Note the narrow entrance into the primary enclosure formed by the wings of the secondary enclosure; this entrance becomes narrower toward the bottom.

FIG. 11 (lower right)—Carrying the basket of fish ashore, slung from an oar. Fishweirs in the background.

estimate of the number of boats operating in 1946 would be as 228
follows: 464
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Bahrein	150
Kuwait	100
Darin, Qatif, Jubail	30
Trucial coast, Qatar, and Persian ports	250
	530

Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the 228
coincidence of the pearling season with the date harvest. Starting 245
about June there is a migration of men northward from the
Batinah Coast to the Trucial Coast; these men work the pearl 221
fisheries. Some go north in caravans, others sail up in their 462
bedens and other dhows. Opposed to the flood of men who make 484
this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home.

Bertram Thomas states that a considerable percentage of the 228
army of men annually migrating northward to the Trucial Coast 567
is composed of slaves.[17] These Batinah contingents are usually 464
accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.[18]

Pearl fishing is a seasonal occupation, as the divers must wait 228
for warm summer water before starting to dive. Probably few 464
people realize there is a winter in the Persian Gulf, and that 132
the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

[18] Ibid., p. 143

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456 a bare minimun, surely, and no more than a nakhoda's right, but
471 the merchants' answer was that if the nakhodas could make new
784 rules, so also could they; and they had the real power. I do not
466 think the attempt of the nakhodas got them very far.

MA While the dates are generally carried both to India and East
443 Africa on a freight basis, nearly all other cargo is bought to the
505 ship's own account and peddled to best advantage. The mer-
439 chants have a substantial share in the dhow's earnings, apart from
the sailor's own ventures, which are limited to what they can stow
in a sea chest on the poop. As far as I was able to discover -- and I
was more than twelve months sailing in deep-sea dhows -- the
freight from the dates, on the typical African voyage, is used to
finance a cargo of salt from Aden and to purchase odds and ends
which might earn a profit in the bazaars of the Benadir coast and
MA Kenya Colony. At the same time, the dhow carries all the passen-
• [184] gers she can prevail upon to make a voyage, anywhere, for the
Arab of Oman, and the Hadhramaut in particular, is an inveter-
ate wanderer, and every dhow is a passenger vessel by the mere
possession of deck enough to lie upon.

The salt is sold in the best market that offers between the Hadhramaut coast and Zanzibar. At the same time, the nakhoda does what trading he can in anything which he knows, from past experience, will command a market. The average dhow never leaves the Gulf without at least some carpets, allegedly Persian but generally of either Italian or English origin, which are used both as trade and as bribes. Cooking stones, ghee, live sheep, cows, sacks of rice and flour, dried fish, haberdashery of all sorts, brassware, cheap enamelware, Arab confectionery -- all these may be aboard, either as ship's ventures or as the crew's, generally the latter.

Every man of the crew concentrates on goods which can be bought cheaply in the free port of Aden, adulterated if possible in transit, and sold to the Somali or Swahili shopkeepers whose little stores abound in every port along the coast of East Africa, from Haifun in the north (which the Italians called Dante) to Mikindani in the south, which is about as far south as the Arabs sail in these days. Only Indian dhows go further, to Madagascar and the Comorin Islands. Gaily coloured turbans of the correct style

443 (for the manner of headdress worn in the different parts of Arabia
505 and East Africa varies considerably; what will sell well at
439 Mukalla, for instance, will find no buyers at Kuwait; and the Arab is a stickler for style), sarongs from Java and Japan, amber and artificial beads of the kind the true Moslem loves to fondle, cigarettes in gay packages but of no advertised brand, cheap perfumes (which I have several times seen the sailors laboriously adulterating with water from the ship's tanks), small crocheted caps to go under turbans, money belts, caps of artificial leather and pullovers of extremely artificial wool, veils for the harem, basketware from the Hadhramaut, sometimes a little hashish or *qat*[1] — these are the sailors' ventures, and the profits are their own.

The sailors are inveterate smugglers; almost none of the goods they bring — apart from the main cargo — is declared. Since they leave from small ports along the coast of Arabia where official supervision, while thorough, is not organized to conform with the Europeans' idea of how trade should be conducted, and since so much of their more highly dutiable goods are private ventures, such manifests as they produce to the authorities are useless. The mariner buys his goods himself, and sells them himself (though he does not mind disposing of them to boats alongside). He sees no point in accepting any official interference, and to him the European on the East African coast is still an interloper, recently arrived and wholly unnecessary.

508 The passenger trade is an important one, particularly in the
● 484 East African voyaging. Though the Italians in their colonies tried
486 to regulate the movement of Arabs, and the growth of Indian influence in Mombasa and Zanzibar has much lessened Arab trade and opportunities, still thousands of Omani and Hadhramaut Arabs travel down the Benadir coast and to Zanzibar annually. Every dhow fit to go to sea — and quite a few which look as if they are not — carries her quota, and some of the overcrowding is incredible. Among 35 Arab dhows which were lying together at Mogadishu, in Italian Somaliland, in the season of 1939, the Italian immigration authorities checked 4,000 passengers. They

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[1] A bush common to southern Arabia, especially the Yemen. The leaves, when chewed, are somewhat intoxicating.

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II

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repayed, and already was loaded with her cargo of salt and rice in sacks, and some mysterious parcels on deck for the Sultan of Mukalla. All her crew had their sea chests filled with trade goods from the cheap *suq* in the Crater at Aden; her carpenter was at work on a 40-foot dhow for sale on the voyage; and she had shipped several Suri and Omani merchants, from Aden, bound on a general trading voyage on their own account, wherever the dhow might take them.

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We sailed first to Mukalla and Shihr, where we embarked passengers (the fare was eight rupees regardless of destination, the passengers providing their own food and looking after themselves entirely) and some further cargo. This consisted mainly of a parcel of condemned dates which it was hoped to sell to the Somali (or failing that, to feed to the Swahili labor in the Rufiji Delta, when loading mangrove poles), some dried shark which smelled high even aboard the dhow, some cooking stones, and a considerable quantity of basketware.

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With this lot aboard, and the *nakhoda* pessimistic and depressed at the small number of passengers, though his dhow appeared crowded, we sailed first to Haifun, a salt port on the northeastern coast of Italian Somaliland. There we anchored among a fleet of dhows, and did nothing at all for some time. Finally, some rice was sold, some haberdashery smuggled into boats which the local Somali brought alongside, and lot of fish caught and dried. Then we went on to Mogadishu, running down the coast with the northeast monsoon. At Haifun another Kuwait ship was caught smuggling and heavily fined; and all the Kuwaiti in the harbour contributed to pay the fine. At Mogadishu, it was hoped to land a hundred or so passengers, but the Italians would not permit them to disembark. Trade there was extremely difficult, and little could be done. Some of the merchants left, as far as I could gather, to try to collect debts owing to them from previous voyages. Some smuggling went on (I saw a lovely carpet change hands), some of our passengers melted away and their places were taken by others, equally undocumented.

After a week or ten days we passed on down the coast to Lamu. Here more passengers landed and there was a determined attempt to sell the new dhow which the carpenter had completed. She

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443 505 439 (for the manner of headdress worn in the different parts of Arabia and East Africa varies considerably; what will sell well at Mukalla, for instance, will find no buyers at Kuwait; and the Arab is a stickler for style), sarongs from Java and Japan, amber and artificial beads of the kind the true Moslem loves to fondle, cigarettes in gay packages but of no advertised brand, cheap perfumes (which I have several times seen the sailors laboriously adulterating with water from the ship's tanks), small crocheted caps to go under turbans, money belts, caps of artificial leather and pullovers of extremely artificial wool, veils for the harem, basketware from the Hadhramaut, sometimes a little hashish or *qat*[1] — these are the sailors' ventures, and the profits are their own.

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[1] A bush common to southern Arabia, especially the Yemen. The leaves, when chewed, are somewhat intoxicating.

Kuwait MI 1

missed at least another 600, for no list which the dhows supply is MA really reliable, and each ship carries many persons who are with- 505 out European documents. As a new dhow arrives, sometimes doz- 484 ens of her passengers will drop quietly over the side and disperse 486 themselves among the dhows already in the harbour. As with MA the disposal of the seamen's ventures, all Arabs take a delight, [181] regardless of their ports of origin, in the general defeat of European regulations.

II

K MA

At first glance, the whole deep-sea trade in dhows seems unorganized and almost unregulated. 505 In point of fact, it is very well 441 organized indeed, and has a tradition going back, probably, some MA thousands of years. There is no association of dhow owners in [181] Arabia as there is a Country Craft Organization on the west coast of India, for the Arab of today is too inherently disunited and fiercely individualist to make this type of co-operation possible. But he can organize his own trade very well, nevertheless. K The MA typical wealthy business family of Kuwait maintains offices, almost always managed by sons of the house who frequently rotate 472 on the circuit, in all the more important centers of Arab coastal trade. The head office is at Kuwait or perhaps Basra, with branches at Aden (in the Crater, not at Steamer Point), Bombay, possibly one other west coast of India port, and Mukalla. Where there is not an actual branch of the family conducting business on a permanent footing, there is either a trusted agent (probably a relative), or one of the younger sons sent in the trading season to watch the family interests. This, for instance, is done at Berbera, in British Somaliland, which, when times are good, can absorb a surprising quantity of Iraqi dates carried there in dhows. K The MA agent or family member is primarily responsible for the collection 453 of debts — always a problem in a trade which is carried on with- 426 out banking. A family carrying on business on such a scale will have a finger in perhaps a score big dhows, all nominally "owned" K by their own *nakhodas*. [643] The cash resources of some of these families must be enormous, and behind them stands the Sheikh of Kuwait, who was a wealthy man even before oil was discovered in his territory.

forbidding traffic in adult women;[26] in 1948 these same two countries 567 failed to file reports on efforts to suppress traffic in women, children, and obscene publications.[27]

Slaving is difficult to stamp out, as the African victims are led to believe that their social status will be bettered. Actually, there is some truth in this, for an African, even as a slave, has a far better life in Arabia, since the Arabs treat their slaves fairly.

British regulations at Zanzibar provide that dhows must carry crew members voluntarily signed on and not in excess of that needed to sail the ship.[28] At Mombasa, *British Regulations for Native Vessels* provides that no man may be signed on as a seaman without satisfying the officials that he has voluntarily shipped, and further that no passengers are to be shipped without the knowledge of the authorities.[29] However, Villiers[30] relates that an Omani *sambuk* intentionally ran down a fishing canoe off Africa and 'saved' two Africans to be sold later as slaves in Arabia.

In essentially the same category as the slave is any other illegal or illicit 439 trade. During World War I gun-running was at a high, but now the trade is not very prosperous. There is considerable cargo smuggled to avoid duties; tea and other goods are run to Persia by the Arabs on the Trucial Coast of Oman—the old Pirate Coast.

The customs and immigration officials in Africa do not have much use 486 for the Arab deepwaterman, with his Arab passengers and smuggling crew. On the other hand, the Arab takes delight in deception, and attempts to confuse the European as much as possible. No large dhow ever [505] carries a visible name; its papers usually contain an official name, but more often the dhow is known by the name of the *nakhoda*, who is usually the nominal owner.

As soon as an Arab dhow reaches an African port, the local officials try to get a passenger and crew list; in this they never succeed, as certain of the passengers always vanish into the native anchorage as soon as the anchor is down, to return after the survey is made. This is easy, as all the native craft are herded into a separated anchorage and often new arrivals have to drive into small spaces in the middle of the anchorage.

Few carry passports or other identification, so actual identification is

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[26] J. L. Carver, 'Slavery's Last Stronghold,' *United Nations World*, II, No. 5 (June, 1948), 24-27. 113

[27] However, in all fairness it should be pointed out that the USSR, Afghanistan, Byelorussia, Honduras, Iceland, and Norway also failed to make reports on the grounds that the problem has not arisen in their countries.

[28] A. Villiers, *SS*, p. 212.

[29] Ibid., p. 190.

[30] Ibid.

486 difficult, if not impossible. When shipping out of a port, an Arab simply gets approval from the port police and moves his chest aboard. However, in Africa some ports will not allow passengers to discharge; to get around this, the Arab *nakhoda* sometimes obtains permission for shore leave for some of his passengers, and brings back a different group, who want to leave. Sometimes as much as twenty per cent of a passenger list of several hundred may be shifted in a port, but the dhow still leaves with a full complement, so everyone is happy.

Regulations are a challenge to the Arab, although some of his disregard for regulations may be classed as nothing less than pure thievery. Villiers[21] relates how a Persian dhow managed to load two hundred tons of salt stolen from the Italians at Haifun in 1939. The salt was successfully loaded at night from small canoes, but the dhow was apprehended just as it was ready to sail, and the *nakhoda* was thrown into jail.

III

502 487 Arab navigation, on the run from Arabia down the African coast or over to India, is little more than dead reckoning, and a poor brand at that. The only instrument the large Arab craft carries is a compass, which is assumed to give a true reading. Most Arabs have never heard of compass deviation and will not believe that a compass can give anything but a true reading. Besides a compass, the deep sea dhows sometimes carry a chart, which may be of surprisingly recent origin or of surprisingly ancient origin; Villiers[22] tells of once seeing an Arab pilot armed with a chart of the Indian Ocean corrected to 1746! A few Arabs carry Isa Kitamis' *Directory of Eastern Seas* in Arabic, which contains many useful descriptions of the landmarks which may be encountered.

However, as the Arab navigates, a 1746 chart and a faulty compass are ample for his needs, for he simply coasts along, usually in sight of land. Going down to Africa, he sails before the wind with land to starboard; returning he sails before the wind with land to port. The seas that he sails are like a book to him, and he seldom needs his chart; this is possible, as there are no reefs along the African way. When going to India the Arab proceeds in the same manner, coasting along. In going to Africa, the Arab may get out of sight of land while crossing the Gulf of Aden, but it is only a matter of a day or so, as the land is mountainous and high on both sides of the Gulf. In sailing the waters of the Persian Gulf, the dhow

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[21] Ibid., p. 112.

[22] Ibid., p. 149.

MA When a deep-sea dhow is built, at least some of the money is
471 put up by the *nakhoda* himself and his family. It is the first essen-
426 tial of the *nakhoda* that he should be from a family of standing in
565 the community, which will pay its debts. Just why such families cannot finance a dhow by themselves I was unable to discover, but the Arab, apparently, has no objection to carrying on business under a cumbersome structure of debt. The merchant, backed by the Sheikh or the ruling family, backs the *nakhoda's* family, who support in turn a trusted and experienced member to take command of the dhow.

MA It is customary for the boys in such families to go to sea while
565 very young, but they never work as sailors. They are always
871 privileged: no sailor can become a deep-sea *nakhoda*, since obvi-
867 ously if his family is of standing, he would never serve before the mast. The children sail with him sometimes from the age of six or seven, though not regularly. They will make one or two long voyages, looking on and learning but not actually doing anything; then they will remain at home a year or two before going out again. They take command very young. Schooling, at least in 1939, was normally restricted to the local Koranic schools, and rarely occupied more than three months in the year. Only merchants' sons went to the colleges of Iraq, Egypt, and Syria.

MA Gradually the head of a *nakhoda's* family may attain the
565 status of a lesser merchant himself, though his merchandise is
554 generally limited to the wherewithal to build ships, which comes
506 up in his own dhows from the Malabar coast. But a *nakhoda* himself almost never becomes a merchant, and a merchant's son never becomes a *nakhoda*. Nevertheless, the profession of conducting deep-sea dhows about the waters of the Indian Ocean is a highly respected one, and the shipmasters of Kuwait are, on
MA the whole, a very competent and knowledgeable class, though
● [487] few of them can practice much astronomical navigation. Even their long voyages down to Zanzibar or to Calicut are coasting, really down with one monsoon, and back with the other, almost always in sight of land. Their real ability consists in their local knowledge, both of ports and trade.

K
MA In Kuwait, in 1939 — as now — there were upwards of 10,000
506 qualified deep-sea sailors. An astonishingly high proportion is of
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The Dhow Sailor[1]

BY RICHARD LeBARON BOWEN, JR.

I

487 SINCE time immemorial, cargo has been transported in sailing ships up and down the South Arabian and the East African coasts. As the medieval Sinbads and the ancients before them had done for countless centuries, so are the Arabs, Indians, and Persians today transporting cargo in sailing ships up and down these same shores. Today these sailors operate the last great fleet of deepwater sailing ships in the world, and because of the special circumstances, this fleet will probably sail on for many more centuries oblivious to the changing pace of life around it. Life for these modern sailors has changed little in the thousand years that have passed since the adventures of Sinbad the Sailor were recorded in *The Thousand and One Nights.*

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132
The Arabs, Indians, and Persians are still able to sail their fleets of

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[1] Credit for this article belongs in large part to Mr. Frederick Hunt, who, after reading the author's 'Arab Dhows of Eastern Arabia' in THE AMERICAN NEPTUNE, wrote to the Editor and asked if a follow-up might be possible, 'telling something of actual life aboard a dhow, how the crew lives, watches they stand, living conditions, what they eat, their wages, etc.' Mr. Hunt's outline has been followed almost to the letter, with some additional material added to round out the study.

Shortly after the first draft of the article was finished, the writer was very fortunate to become a member of the American Foundation for the Study of Man Arabian Expedition, which conducted archaeological investigations in South Arabia during the winter of 1950. Almost a month spent at Aden and on the south coast of Arabia, enabled the writer to collect much valuable additional first-hand data on the life of the dhow sailor. The writer is indebted to Mr. Wendell Phillips, leader of the expedition, for his assistance in making this particular phase of the study possible. The writer is deeply grateful to Prof. W. F. Albright, vice-president of the American Foundation for the Study of Man, for his guidance and assistance in numerous details in the work. The writer is also indebted to Dr. Philip K. Hitti for valuable advice on certain points.

In doing any work on the subject of dhows, one must consult what Alan Villiers has written on the subject. By sailing with the Arabs on their dhows for almost a full year Mr. Villiers has obtained an intimate picture of the dhow that the casual observer will completely miss, or the serious worker may not be able to get, as the Arabs are rather suspicious of Europeans who investigate their activities too closely. The writer of this present article has drawn on Villiers' material to round out certain aspects of this article and to supply various facts and figures for which Villiers alone is the source. Most of such material has been taken from his entertaining book, *Sons of Sinbad* (New York: Charles Scribner's Sons, 1940), which in further reference will be abbreviated to A. Villiers, *SS.* 113

A description of the various types of dhows mentioned by their Arabic names in this article will be found in R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 87-132, and R. LeB. Bowen, Jr., *Arab Dhows of Eastern Arabia* (Rehoboth: Privately printed, 1949).

502 132 lateen-rigged dhows, which operate in the main without the aid of engines, partly because of the amazing predictability of the monsoon trade winds. For millenniums the northeast monsoon has started unfailingly about October and blown for six months, until the southwest monsoon set in about April and continued for the next six months. By a strange coincidence, these winds blow virtually parallel to the South Arabian and East African coasts. The Arabs ride their lateeners down from the north on one wind and return on the other. So convenient is the arrangement that it is probably one reason why the fair-weather lateen rig has persisted for so many centuries on the deepwater dhows in the waters of the Indian Ocean.

487 The *Periplus of the Erythraean Sea* (written by an anonymous Egyptian-Greek sailor in A.D. 50) tells us that the secret of the periodicity of the monsoons was discovered by Hippalus somewhat earlier and that 'from that time to the present day' ships bound for India from the Red Sea or South Arabia set a course 'straight out to sea.' It should be noted that Hippalus' find was a 'discovery' only from the Egyptian and the Greek point of view, as he discovered a secret that Indian and Arab mariners may have been carefully attempting to hide from Egyptian and Greek sailors. The original discovery of the fact that one could 'sail straight out to sea' and reach India from South Arabia, rather than by coasting, was more of a geographical than a meteorological discovery, for it was a realization of the southern projection of India (see Figure 1). Certainly no sailor in a sane mind would set a course 'straight out to sea' from South Arabia if he thought that the lands around the Erythraean Sea were oriented as shown in Figure 2.

The South Arabian kingdoms long maintained a monopoly of carrying the goods of the East via camel to the West. The Arabians collected the products of India and East Africa at the southern terminal of the famous incense route and sent these north, along with their own products, in huge camel caravans; the recipients in the north thought that all the products they received originated in South Arabia. Many writers have stated that the South Arabian kingdoms were doomed when the West discovered the secret of the periodicity of the monsoons. However, this writer feels that the monsoons had little to do with it; more important was the discovery that many of the coveted products thought to be indigenous to South Arabia actually originated in East Africa and India. After this fact was discovered, Greek and Roman shipping entered the Indian Ocean; in opening up trade with India and Africa they immediately started to slash the revenue of the South Arabians. It should be

487 noted that Western shipping could have successfully accomplished the same end by simply coasting, even if the direct southern route to India had never been discovered.

[102]/

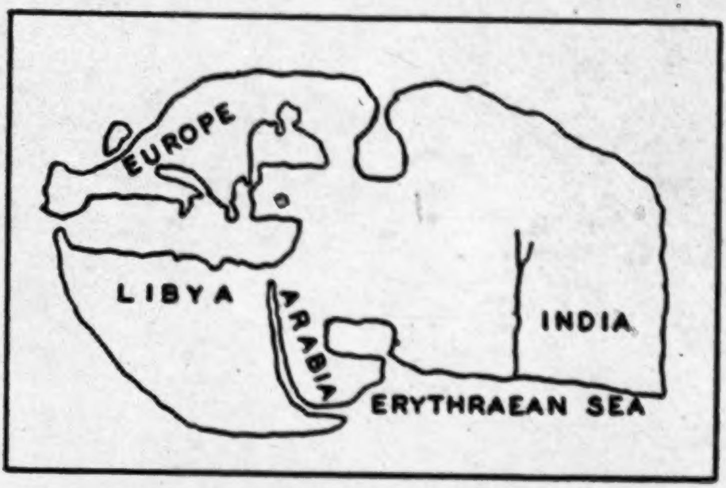

Fig. 2. The East as the ancient Greeks and Romans visualized it in the first century B.C. The map is constructed from distances and directions presented by the ancient geographers

It should also be emphasized that for the people inhabiting the coasts there was never any 'discovery' of the fact that the monsoon trade winds blew in one direction along the South Arabian and East African coasts for six months and then blew in the opposite direction for another six months; the people up and down these coasts knew it as a fact. Thus it was probably known to the Babylonians and Egyptians that the winds along the coasts in the Indian Ocean were subject to seasonal reversals. The Babylonians had organized sea trade as early as the twenty-third century B.C.

However, the fact that a ship could sail between India and Arabia directly, by a route shorter than the coasting route, had to be discovered. Whether it was the Indians or the Arabs who discovered this is not known; while we have a lack of reference to ancient Arabian shipping, there is considerable material referring to Indian shipping before the Christian era. A Buddhist record attributed to the fifth century B.C. relates that the sailors then used 'shore-finding birds' to find land.[2] They released the bird and, if it could not spot land, it returned to the boat;

[2] T. W. R. Davids, *Journal Royal Asiatic Society* (1899), p. 432.

however, if it sighted land, it headed straight for it, showing the sailors 487 the direction of the nearest land. Certainly this would seem to indicate voyages of more daring than mere coasting voyages. There are numerous Sanskrit and Pali references to Indian trading voyages dating from about the third century B.C., and there is one Sanskrit manuscript containing a treatise on shipbuilding in ancient India, giving the sizes (ranging up to 260 feet in length) of dozens of types of ships.[3]

Zanzibar is the unofficial southern port for the lateen fleet sailing down 103
from the north, although the Indians sometimes go on to Madagascar. 487
Soon after the northeast monsoon has set in, lateen craft start to come into Zanzibar. Arabs come from the Persian Gulf ports of Basra, Kuwait, Bahrein, and Sharjah on the Trucial Coast of Oman; Persians send ships from the Persian Gulf ports of Bushire, Lingeh, Qishm, and Bandar Abbas. Arabs of the Oman ports of Sur and Muscat on the Gulf of Oman and Indians from the Gulf of Cutch and the Malabar coast all send dhows down to Africa. Arab craft also sail down from Aden and Mukalla in the Hadhramaut, while the Red Sea contributes its craft from Port Sudan, Massawa, and Hodeida. Even the Somali coast contributes to the fleet arriving at Zanzibar, with dhows coming down from Djibouti, Berbera, and Mogadiscio.

Kuwait is the largest maritime and dhow-building port in the Persian 361
Gulf, with Bahrein a very poor second. While Bahrein cannot begin to 501
compare with Kuwait from a maritime standpoint, it probably ranks ahead of the latter as an emporium in the Persian Gulf. It serves for all the entrepôt trade to the eastern coast of Saudi Arabia, the goods coming into Bahrein in large dhows and being transshipped from Bahrein to Arabia in shallow-draft *jalbhuts* (see Plate 17—top). In 1939 Kuwait had 106 ocean-going *bhums* on the registry.[4] However, the majority of the Kuwait deepwater *bhums* sail to India, rather than to Africa, carrying dates from Basra. The mariners of Kuwait probably reached their present maritime status a little over a century ago. Palgrave traveled in the Persian Gulf in 1862-1863 and was much impressed with the maritime activity of Kuwait:

> Among all the seamen who ply the Persian Gulf, the mariners of [Kuwait] hold the first rank in daring, in skill, and in solid trustworthiness of character. Fifty years since their harbour with its little town . . . was a mere nothing; now it is the most active and the most important port of the northerly Gulf.[5]

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[3] R. Mookerji, *Indian Shipping* (Bombay: Longmans, Green and Co., 1912), p. 19.

[4] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 399.

[5] W. G. Palgrave, *A Year's Journey Through Central and Eastern Arabia (1862-63)* (3rd ed., London: Macmillan and Co., 1866), II, 386.

cargo of fish if the local supply is not sufficient, and fish their way down 439
the Arabian and African coast, selling fish wherever they can. Then they 226
do the same thing on the way back. Mukalla is a favorite stopping place
on the way down to Africa; I have seen dozens of *bedans* from Sur come
into Mukalla and lay out their catch of shark or tuna on the beach to dry
while they beached their dhows and put a coat of shark liver oil on their
hulls (see Plate 18—top and bottom). Shark is a favorite Arab food; the [262]
flesh is cut off in strips or slabs and dried, while the liver is saved for its
oil. The Arabs have little use for the tails or fins of the shark, but they
are all meticulously saved and eventually find their way to China via
India.

Thus these fish-bearing dhows from Oman start their trading venture
from their home port, carrying a product of the port, and never carry
other cargo; they trade fish from Sur to Zanzibar and back. For this trade
they apparently always use the primitive *bedan*, usually ranging from fifty [501]
to sixty feet in length. The Suris export dates from Oman, or go to Basra
for a cargo; when carrying dates they use large *sambuks* and *baghlas*.

In contrast to Arab and Persian ships which sail along the coasts the 439
whole way, whether going to India or Africa, Indian vessels usually sail 487
straight from India across the ocean for South Arabia or Africa with consignments of goods from Indian exporters at specific ports. Only rarely do they carry dates; their usual cargo consists of the products of India. From the Malabar coast they may carry coir rope stuffs, coir matting, teakwood, teak dugout canoes, coconuts, spices, cement, bricks, or tiles, while from Bombay they may pick up cotton piecegoods, groundnut oil, or tea. Most of the Indian ships that voyage to Arabia or Africa come from the Gulf of Cutch; few if any craft from Bombay or the Malabar coast carry this trade today.

In vivid contrast to the Arab date cargo and Indian cargo, which is usually on consignment, the replacement cargo for the rest of the voyage for the average Arab dhow is purchased by the *nakhoda* from the profit made on the date freight, for sale at the best market. After its date cargo has been discharged, the dhow becomes a trader in every connotation of the word, picking up and selling cargoes as she coasts south along the South Arabian and East African coast.

Sometimes the *nakhoda* may pick up a small cargo of partially spoiled dates to unload on the Africans; these the crew may wrap meticulously in fancy wrappers. At Aden the dhow may take on salt, sugar (from Java), rice (from Rangoon), canned goods, hardware, kerosene, or cotton goods and prints, and from the Hadhramaut coast the cargo may be dried shark

439 487 or other dried fish, *ghee* (clarified butter), honey, tobacco, grinding stones, and straw work (fans, mats, and baskets). It must be remembered that most of the cargo moving around the Middle Eastern waters in small vessels, whether dhows or small coastal steamers, is for the native trade and is destined for native bazaars, which are noted for the cheapness and poor quality of their wares. Once the dhow is loaded it is ready for the trip down the East African coast; however, the Arabs sometimes take a month or more to collect a full cargo.

Upon the *nakhoda* of the dhow rests the responsibility of getting another cargo for continuing down the African coast once the consigned date cargo is discharged. Invariably the *nakhoda* is the nominal owner of his dhow, so he acts as his own agent. As the cargo loaded after the dates are discharged is not on consignment, its selection is a matter of the *nakhoda's* judgment, with an eye to what will sell best in the African markets. However, a cargo that must be regarded as essentially on consignment is that of passengers. On some Africa-bound dhows passengers comprise a considerable portion of the cargo. The competition for passengers is very brisk, so that there is sometimes a race among the various *nakhodas,* who hasten to neighboring ports via motor launch as soon as their ships reach South Arabia to discharge their dates.

167 505 Through the dhows there is a constant flow of Arabs from South Arabia and Oman and of Indians from India. The immigrants usually become porters, hawkers, musicians, or beggars, but if they are very industrious, they may end up owning a small shop in the *suq*. Their usual aim in migrating is to work long enough so that they can go home after they save a little money; usually they never make enough to get out. Villiers[16] states that the Italian officials in Mogadiscio checked four thousand passengers on thirty-five dhows that were in the harbor when he was there in 1939. In 1937 the fare along the Hadhramaut coast between ports was three rupees.[17] In 1939 the fare from South Arabia to any African port was only eight rupees for men and twelve for women.[18] In Aden in 1950 the fare for natives traveling as deck passengers on A. Besse and Company dhows with no accommodations was 15 rupees to Berbera, Djibouti, and other ports about 150 miles from Aden; thirty rupees to Massaua, Mukalla, and ports about 450 miles away; and one hundred rupees to Jidda, Port Sudan, or ports approximately one thousand miles from Aden. These were fixed rates on the dhows operated by Besse; other dhows that

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[16] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal,* II (1948), 404.

[17] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 313.

[18] A. Villiers, *SS,* p. 78.

486 difficult, if not impossible. When shipping out of a port, an Arab simply gets approval from the port police and moves his chest aboard. However, in Africa some ports will not allow passengers to discharge; to get around this, the Arab *nakhoda* sometimes obtains permission for shore leave for some of his passengers, and brings back a different group, who want to leave. Sometimes as much as twenty per cent of a passenger list of several hundred may be shifted in a port, but the dhow still leaves with a full complement, so everyone is happy.

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III

502 Arab navigation, on the run from Arabia down the African coast or
487 over to India, is little more than dead reckoning, and a poor brand at that. The only instrument the large Arab craft carries is a compass, which is assumed to give a true reading. Most Arabs have never heard of compass deviation and will not believe that a compass can give anything but a true reading. Besides a compass, the deep sea dhows sometimes carry a chart, which may be of surprisingly recent origin or of surprisingly ancient origin; Villiers[22] tells of once seeing an Arab pilot armed with a chart of the Indian Ocean corrected to 1746! A few Arabs carry Isa Kitamis' *Directory of Eastern Seas* in Arabic, which contains many useful descriptions of the landmarks which may be encountered.

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is often out of sight of land, at least on the Arabian side, as the Arabian side is treacherous and the coast low and sterile.

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[21] Ibid., p. 112.

[22] Ibid., p. 149.

A dhow sailing from the Persian Gulf to Africa or to India does not actually go at all out of the way by coasting, as a glance at a map will show. This practice of coasting has the added advantage of keeping the dhow within easy rowing distance of land in case the ship should go down, a possibility never overlooked.

In contrast to the Arabs and the Persians, the Indians still navigate their dhows over open ocean from India. However, a glance at the map will show the reason—craft from India would have to go far out of their way to coast to Africa in sight of land. Thus by necessity the Indians have maintained the knowledge of navigation that the Arabs and Persians had mastered so successfully in medieval times; being able to get along successfully by coasting their deepwater craft, the Arabs and Persians have lost the navigational knowledge which in medieval times brought them in contact with junks from China in the waters farther east. When the Arab has to sail a navigated course, he usually, though somewhat reluctantly, gets an Indian navigator. It is interesting to note that the ancient mariners in Greek and Roman times successfully navigated the southern route to India using only the sun and the stars; the mariners' compass was not invented until the Middle Ages.

There is one other alleged aid to navigation in the Indian Ocean that was known to the ancients. Niebuhr traveled from Arabia to India via dhow in 1763 and related that

> The passage between Arabia and India was formerly thought very dangerous. Ships were carried on by so rapid a current, that they could neither keep their reckoning, nor distinguish the coast during the rainy season: several were consequently lost on the low coasts of Malabar. These misfortunes have ceased to take place, since an observation was made, which has been thought new, although Arrian speaks of it being known to the ancients; in the Indian Ocean, at a certain distance from the land, a great many water serpents, from 12 to 13 inches in length, are to be seen rising above the surface of the water. When these serpents are seen, they are an indication that the coast is exactly two degrees distant. . . . We saw some of these serpents, for the first time, on the evening of the 9th of September; on the 11th we landed in the harbour of Bombay.[22]

On the run down to Africa the Arabs sail by night as well as by day; at night they make sure they are well out at sea and set a safe course by the compass. With its many reefs the Red Sea is an exception, for even local craft with a knowledge of the way anchor by night and sail by day

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[22] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 373.

502 whenever they are near reefs. An exception to this is the slave-runner
487 dashing from Africa to Arabia, for his activities are best carried on under cover of darkness. The reefs in the Red Sea are the main reason why foreign dhows do not venture very far into its waters.

In the field of navigation the Arabs are little impressed with Vasco da Gama's voyage, so famous in the West.[24] The Arabs take all the credit themselves; they claim that da Gama forced an Arab pilot to show him the way to India. Arab legend relates that an Ibn Majid, a famous pilot from the Persian Gulf, was delivered to da Gama by the Sheikh of Malindi (in present-day Kenya) as a hostage for stopping the siege of the town; the Arabs immortalize this Persian Gulf pilot and associate da Gama only with European intrusion into their territories.

501 The Arab dhow is actually not a very seaworthy craft (see Plate 19—top). It manages very successfully in fair weather, but in any kind of rough weather the dhow is likely to get into trouble fast. The *baghla* is apparently considerably less seaworthy than the *bhum,* as even Arab passengers (who are not particularly well informed about anything) prefer to travel in *bhums.*[25] Apparently the great transom stern of the *baghla* tends to make the craft unmanageable in heavy seas.

In the African port of Mombasa a Casualty Book listing all dhow casualties in the vicinity of the port shows that, while there were frequent accidents with small craft and less with larger craft, there was little loss of life.[26] This stems from the Arab's method of coasting close enough to land so that he can row ashore. However, no records list the number of dhows that have gone down with complete loss of life.

If the dhow springs a leak, it may often be disastrous. On a heavily-laden dhow the crew cannot get at the leak to repair it, and not having any pumps they do not even have time to start bailing. If they can get at it, the Arabs have been known to stop a leak where a plank was stove in by filling a cloth with rice, tying a string around the gathered neck and stuffing it in the hole; when the rice expands it fills the hole tightly.

000 Villiers[27] relates that a 178-ton Indian dhow loaded with mats sprang a leak and sank off Africa because the cargo prevented anyone from getting at the leak. The crew took fifteen minutes to clear the dhow, and very soon afterwards the sea was over her decks. The early English traveler Palgrave[28] had the same thing happen to him in 1863—an event which

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[24] A. Villiers, *SS*, p. 197.

[25] Ibid., p. 106.

[26] Ibid., pp. 191-194.

[27] Ibid., p. 193.

[28] W. G. Palgrave, *Central and Eastern Arabia* (3rd ed., London: Macmillan and Co., 1866), II, 342 ff.

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2

Kuwait MI 1

K MA 396 439

building and trading port of the Persian Gulf, though offering little trade itself. Its only real rival in the deep-sea trade was the ancient port of Sur, near Ras al-Hadd, on the Gulf of Oman. Figures for the port of Sur were unobtainable, but there must have been at least 100 deep-sea dhows sailing from there, the majority to Mogadishu, Mombasa, and Zanzibar. Several ports on the Trucial Coast of Oman also sent their quota of deep-sea ships to Africa and India; and Muscat and Mutrah Bay, and the ports of Lingeh and Qishm, in Iran, contributed a few. But the flag of Iran was a rarity in both Indian and African ports, compared with the Arab.

K MA 396 439 464

In addition to the Persian Gulf and Omani ports, Mukalla in the Hadhramaut, Ma'alla by Aden, Hodeida, Mocha, and Luhaiya in the Yemen, and Qizan on the coast of Asir in the Red Sea, all build and maintain considerable fleets of dhows. These I have seen, personally; there are many ports I was unable to visit. It is probable that the dhow trade round the Arab coasts employs upwards of 2,000 vessels of one sort or another, in which at least thirty or forty thousand men gain some sort of livelihood.

K M.A. 439 505

For many years, steamers of the British India Company have been trading in the Persian Gulf. Kuwait is still well served by steamers from Karachi, and an occasional long-voyage vessel used to put in from New York and London, even before the oil resources began to be exploited in 1940. American, German, Italian, and British lines, none of them likely to overlook any cargoes, all traded to the Gulf. The African East Coast and the Indian coasts are even better served. How is it, then, that a dhow trade of such importance still survives? How is it organized, and how managed?

K ● MA ●488 439 505

One reason — perhaps the chief — why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2

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his vessel pays practically no port dues. His dates can therefore be warehoused in the dhow, until the market can easily absorb them.

MA 439 443

The dhow trade is "native" trade, a stubborn plant which has been growing a long, long time. Nearly all the cargoes carried in dhows are for the native bazaars, and almost never for European account. Much of the cargoes consists of goods which the dhow captain himself, or some merchant or merchants travelling with him, sells for his own profit. The dhow is a peddler, as well as a carrier; a storehouse, as well as a ship; a means of livelihood to travelling merchants, as well as to her crew proper. Basra dates, though the most important outward cargo,[1] are only one source of revenue: there are a host of others, not necessarily always legitimate.

K MA [245] 456 471 784 466

Kuwaiti owners of date plantations on the nearby Basra river play a considerable part in the financing of deep-sea dhows, though in most cases the captains, called *nakhodas*, are at least the nominal owners. It suits the merchants well that the *nakhodas* should regard themselves as the owners, for this provides them with a cheap form of insurance. If the dhow be lost it is the *nakhoda's* loss, and not the merchant's, for the poor captain must pay back not only the value of the dhow but the advance of freight given him to finance his voyage. Since Islam forbids all forms of ordinary insurance, this arrangement is to the merchant's liking. The *nakhodas* must accept it, for in most cases there is no other way by which they can acquire a big dhow.

In Kuwait, immediately prior to the outbreak of World War II, there was beginning to be some restiveness about this, and an association of the *nakhodas* had the temerity to issue its demands upon the merchants. These included payment of demurrage when unduly delayed at the loading berths in Basra (a dhow might be kept for weeks waiting for her cargo), a sliding scale of freights for different ports instead of the customary flat rate of 1.5 or 2 rupees a package regardless of destination, liability for the return of advances to cease with the loss of the ship, two competent officers for every seagoing dhow, and so forth. The demands represente

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MA 804 505

[1] Crew requirements and the very measurements of the dhows themselves are reckoned in terms of dates. A sailor to each 100 packages is the general rule, in Kuwait, and a dhow is spoken of there as having a capacity for 2,000 packages of dates, rather than as being of 100 tons burden.

[illegible] C-4 (1963–1967) 1980 MK2 Maritime Arabs MK2

their graves, and justly, too, for diving probably hastened their 228
end. The Government demands that account books be given each 656
diver and that they be kept up properly, and sends inspectors to 426
see that they are. Before the season begins at Bahrein the amount of cash advances is agreed upon and proclaimed. The divers have put up a terrific objection to this limitation, for it seemed to them that they were simply getting less money. They could not understand that their debt was being lowered—in fact they did not care, for hadn't they always been in debt?

There is a "diving court" which enforces the arbitrary laws 228
of the industry, such as those dealing with engagement of labor, 698
taxes, spurious pearls, etc. The court also disposes of any case of 686
a *nakhoda* who cannot pay off his debts; the *nakhoda* may lose his boat and divers, but not his personal property.

There has never been any noticeable effort on the part of the 651
ruling sheikhs to better the lot of their subjects: if they were un- 464
employed for long periods in the winter they would be sure to 461
work harder during the pearling season to pay off their winter's
debts. As the local sheikhs levy a tax on every boat and get a cut 426
of some sort on the proceeds, the pearlers in a sense work for them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a farmer, fisherman, or herder there would be little incentive to enter the pearling purgatory. Under normal conditions the divers have an eight months' loaf during which time they live off their *nakhoda;* this is to the liking of both the diver and the *nakhoda.*

However, many divers do find other work, as fishermen or 463
mariners. The depression of the thirties hit the Persian Gulf 464
pearl industry with great suddenness. Within a short period tens 505
of thousands of pearlers in the Gulf found themselves without an occupation. The marine stock of Kuwait rose to the situation and gradually shifted to cargo hauling between Kuwait and
Basra, Iran, India, South Arabia, and East Africa. Large ocean- [501]
going double-ended dhows have carried the fame of Kuwait seamanship throughout the Middle East, sailing to Africa on
one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

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Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2
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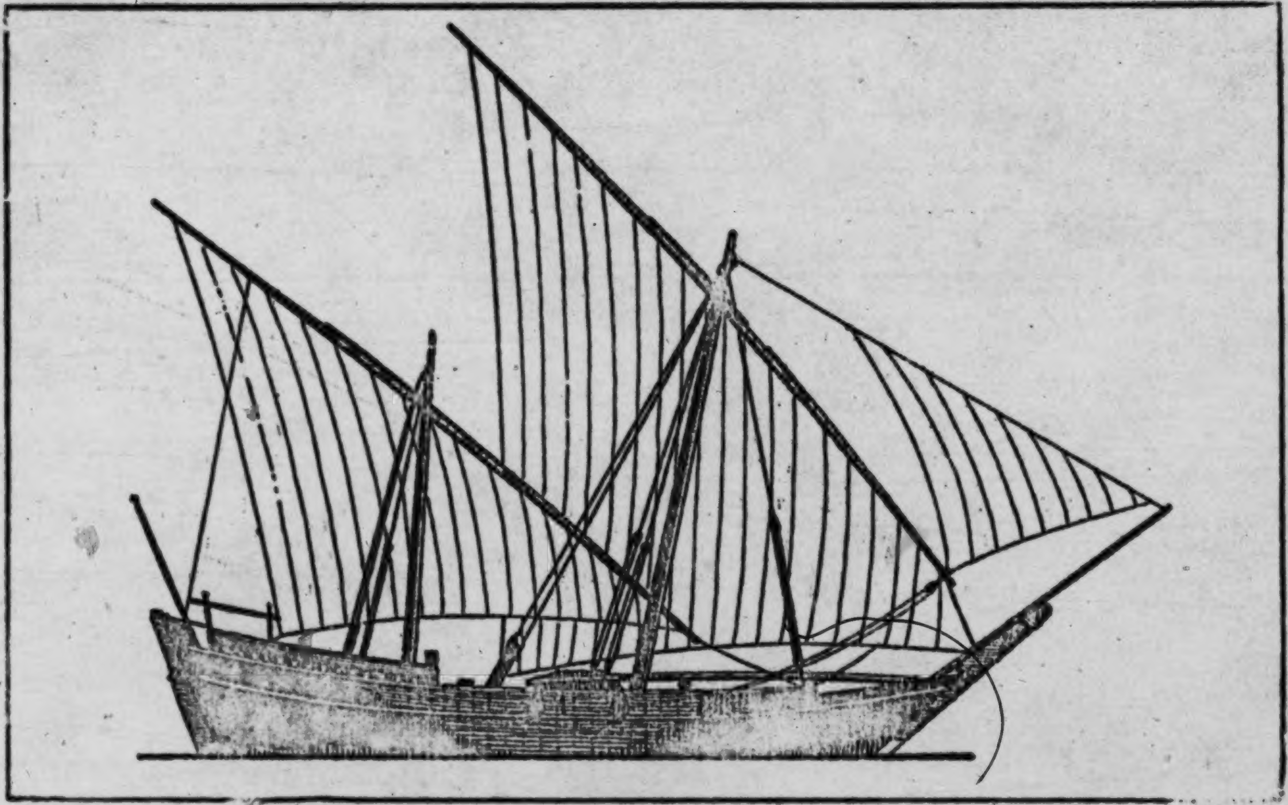
[page 402]



Arab Boom

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Negro origin, the descendants of slaves, though not now slaves MA
themselves. Many others are of Iranian origin. Almost none are 505
Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, 565
the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

As the *nakhoda* class is tied to the merchant by a structure of MA 565
debt, so also are the sailors tied to the *nakhoda* class in the same 426
way. All deep-sea sailing is paid for on a shares system, and there 465
are no wages. Often the *nakhoda* of the deep-sea dhow has an interest in a pearling vessel (though not now to anything like the 328
same extent as in former years), and the sailor may be bound to 428
him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

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The sailors go to sea because they know no other life, and they 505
make a wretched living by incredibly difficult methods. They 511
have no possessions other than the clothes they stand in, and 342
one or two spare gowns, a good headcloth, and a few sarongs. 291
Their toothbrush is the twig of a tree; their ablutions are made 515
five times daily at a mosque well, or in the sea; they know no 501
shelter and rarely have a bed. The younger seamen, I have noticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere. 565

What keeps the seaman a disciplined and more or less contented worker is his hope of reward, principally from smuggling MA 565
or his own ventures, and his ambition to get hold of a tiny shop 554 165
in the *suq* of his home town. This is an ambition he rarely achieves. His more usual fate is to die young, especially if he be also a pearl diver.

of Dar es Salaam, loaded her with mangrove poles, and brought 505
her back to Zanzibar again, where the *nakhoda* had ostensibly 565
been trying to assemble passengers and extra cargo for the return 439
to Arabia but in fact had been enjoying a new harem.

Mates are paid by shares, and are, in my opinion, an oppressed 305
class. They carry their own ventures, engage in smuggling on a 566
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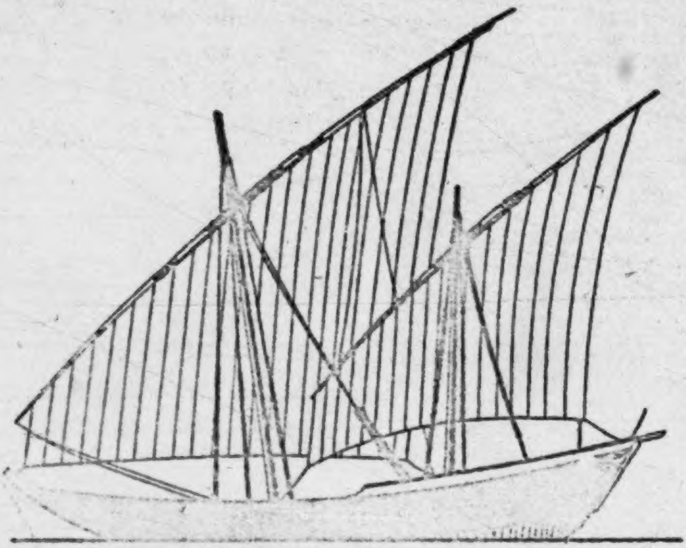

[501]

Baggala

small scale — haberdashery, currency, and so forth — and generally keep the ship's books. They may become *nakhodas* of small *booms*, running to the Basra river; but it is unusual for a man from the more dignified deep-sea trades to descend to this. There is no social status about the *nakhoda* of a coastwise water dhow.

Ships are built by shipwrights who employ no naval architects. 396
Both builders and riggers' lofts are unknown. The ships are put 501
together entirely by eye and take the traditional form either of [171]
the double-ended *boom*, or the carved and embellished *baggala*,
which obviously has a considerable ancestry from the Portuguese
galleon.

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2
Kuwait MI 1

MA 396 501

galleon. *Baggalas*, being both costly to build and unwieldy in a seaway, are now unfashionable. A *boom* is both cheaper and much easier to build, and carries just as much. Her sharp stern makes her safer in a seaway, though it is no part of her builder's plan that her *nakhodas* will try her qualities in a storm. Their sailing, he hopes, will be confined to sunny seas and more or less favorable winds; therefore the clumsy lateen rig will do.

K MA 501 505

The lateen is awkward but cheap; it demands a big crew, but these are cheap, too, for they are the sailmakers and riggers as well as mariners, and their only cost is an agreed share in the ship's earnings. The lateen is a grand pulling sail, and the dhows sail handsomely in their own conditions. There is nothing clumsy about them, though their fish-oiled hulls smell abominably and their underwater bodies are preserved by a mixture of tallow and lime, rubbed on by hand and renewed quarterly. The sailors do this work, as well as handle all the cargoes, keep the passengers in order and extol the merits of their ship so that more passengers might sail with her, tow the ship with her own longboat and propel the smaller dhows by sweeps, in calms, and fight for her if need be. The Kuwait dhows today are never armed, though the Suri may be.

K MA [566]

III

K MA 505 501 439

A brief description of my personal experiences will serve to illustrate a typical East African voyage.[1] I sailed in a Kuwait dhow of the *boom* type, a vessel of 2,000 date-packages capacity — perhaps 150 tons — which had a crew of twenty-eight. She carried something between 120 and 180 passengers, although her hold was full of salt and rice, and her decks were already crowded with a large longboat, a small gig, and a dhow under construction for sale at Lamu.

K MA 439 505

I joined the vessel at Ma'alla, the native port of Aden. She had already been several months at sea, peddling a full cargo of dates from Fao (by the mouth of the Basra river) around the coast of the Hadhramaut, and to Berbera. When I joined her, she had been hauled out on the beach at Ma'alla and her bottom

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K MA 113

[1] The voyage here summarized is described in detail in the author's *Sons of Sinbad* (New York, 1940).

Kuwait MI1

repayed, and already was loaded with her cargo of salt and rice in sacks, and some mysterious parcels on deck for the Sultan of Mukalla. All her crew had their sea chests filled with trade goods from the cheap *suq* in the Crater at Aden; her carpenter was at work on a 40-foot dhow for sale on the voyage; and she had shipped several Suri and Omani merchants, from Aden, bound on a general trading voyage on their own account, wherever the dhow might take them.

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We sailed first to Mukalla and Shihr, where we embarked passengers (the fare was eight rupees regardless of destination, the passengers providing their own food and looking after themselves entirely) and some further cargo. This consisted mainly of a parcel of condemned dates which it was hoped to sell to the Somali (or failing that, to feed to the Swahili labor in the Rufiji Delta, when loading mangrove poles), some dried shark which smelled high even aboard the dhow, some cooking stones, and a considerable quantity of basketware.

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With this lot aboard, and the *nakhoda* pessimistic and depressed at the small number of passengers, though his dhow appeared crowded, we sailed first to Haifun, a salt port on the northeastern coast of Italian Somaliland. There we anchored among a fleet of dhows, and did nothing at all for some time. Finally, some rice was sold, some haberdashery smuggled into boats which the local Somali brought alongside, and lot of fish caught and dried. Then we went on to Mogadishu, running down the coast with the northeast monsoon. At Haifun another Kuwait ship was caught smuggling and heavily fined; and all the Kuwaiti in the harbour contributed to pay the fine. At Mogadishu, it was hoped to land a hundred or so passengers, but the Italians would not permit them to disembark. Trade there was extremely difficult, and little could be done. Some of the merchants left, as far as I could gather, to try to collect debts owing to them from previous voyages. Some smuggling went on (I saw a lovely carpet change hands), some of our passengers melted away and their places were taken by others, equally undocumented.

After a week or ten days we passed on down the coast to Lamu. Here more passengers landed and there was a determined attempt to sell the new dhow which the carpenter had completed. She

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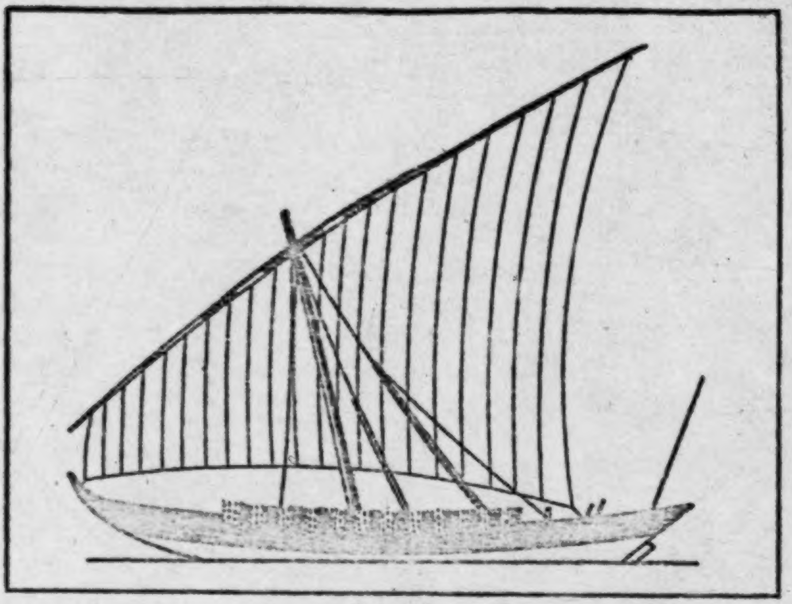

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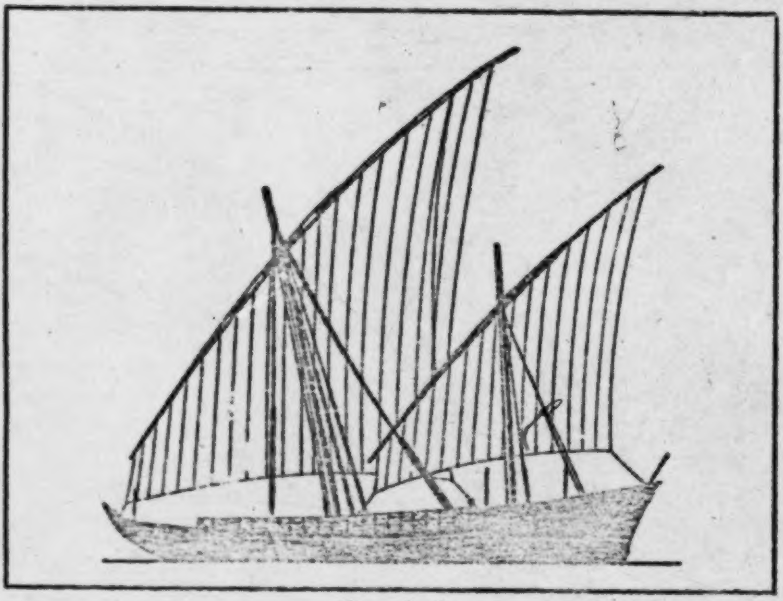

Sambuk

p.412

K was a lovely little vessel which could carry some fifteen tons. The
MA price asked was 1,000 East African shillings, or about $240. At that price,
•501 there was no buyer; she finally changed hands at 700 shillings. Lamu was
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435 a mangrove-pole port, but I gathered the trade was rather too well regulated for our *nakhoda's* taste, and we bought nothing.

K Next came Mombasa, a port with a large dhow trade. Some figures I
MA saw in the *Report of the General Manager on the Administration of the*
439 *Railways and Harbours* (*Kenya and Uganda*) showed that the dhow trade
505 was increasing, rather than diminishing. The latest returns I *say*, for the year ended December 31, 1937, showed that 1,427 dhows had arrived at Mombasa, an increase of ten percent on the previous year. These 1,427 dhows were computed to register -- if they had been registered -- nearly 40,000 tons. Many were Swahili, from Lamu and Zanzibar, but a large proportion was Arab. There was a native harbor set aside for them, and here we sold salt, landing it in our own longboat.
K We got rid of our surviving passengers, gave feasts to merchants and
MA officials of the native harbor (these were a great feature of the voyage,
[57] and were always accompanied by much monotonous singing and dancing), gathered tidings from brother *nakhodas* from Kuwait and Sur about trade prospects further south, collected debts, and finally departed toward Zanzibar.

K There were three Indian and one Iranian deep-sea dhows in the port at
MA Mombasa. The Iranian was an enormous vessel of over 400 tons -- the
501 largest dhow I saw anywhere. She was a *boom* and had been built at
396 Kuwait, but the Kuwaiti sold her because they found such large vessels
439 uneconomic, in bad times, for the mere reason of their two great capacity. They brought too much to sell, when the market was depressed, and they could not wait indenfinitely to dispose of their cargoes because their overhead was too high, despite the fact that everything possible was done to keep down building costs, even to the sending of Kuwaiti shipwrights to the Malabar coast to build big vessels there, rather than carry the timber to Kuwait.

K Zanzibar, at that season of the year, was an even busier Arab
MA port than Mombasa. In the first month of the northeast season,
439 over a hundred ocean-going dhows had arrived at Zanzibar, most

2: Villiers T-6 (1938-39) 1948 MK2 Maritime Arabs MK2
Kuwait MI1

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debts, odd earnings not shared and even odder earnings which were shared, and mysterious complicated procedures, some of which I never did fathom, for the war came, and stopped my investigations.

The son of the merchant family which owned our dhow, however, told me that her gross profit on the nine-month round voyage was 11,000 rupees, not including the proceeds of the crews' and officers' private ventures. But I think he exaggerated, for the total investment in the dhow was little more than that. But at any rate, the dhow's people were well satisfied and they all, save one, went back to sea with her. The *nakhoda* grew fat throughout the summer, and took a new wife, and a new *boom* for his brother at a cost of 10,500 rupees; and I heard no complaints from the merchants.

K MA [595]

K MA 505 465 301 439

As far as I was able to discover, half the gross earnings went to the ship; this was the merchant's share. The cost of the food for the round voyage (which was not much, for all hands lived very simply and fishing lines were the most important equipment in what passed for her storeroom) was deducted from the other half, and the remainder was then divided by shares arranged strictly in accordance with the accepted value of each man's rating aboard. The sailor's share on the voyage which I made was reported to be 135 rupees (about $40), whereof 35 rupees had been advanced. This was little enough for such a long voyage, and though they worked hard at all sorts of things and were ready for any kind of business, I doubt whether a sailor's earnings from other sources amounted to more than 20 or 30 rupees, clear.

K MA 465 506 181

I heard of dhows from Kuwait that season which were distributing less than 100 rupees; according to the Kuwaiti, who had no high opinion of them, the Suri rarely paid out more than fifty. To a sailor whose only home was the sand of the *suq* and his bed the cloak around him, whose wants were few and whose paradise was assured, even 50 rupees may be a vast sum of money. There was, at any rate, contentment throughout the Arab shipping industry as I knew it, and the quiet philosophy I learned among the simple seamen was of great help to me in the days of the long-drawn war which was soon to follow.

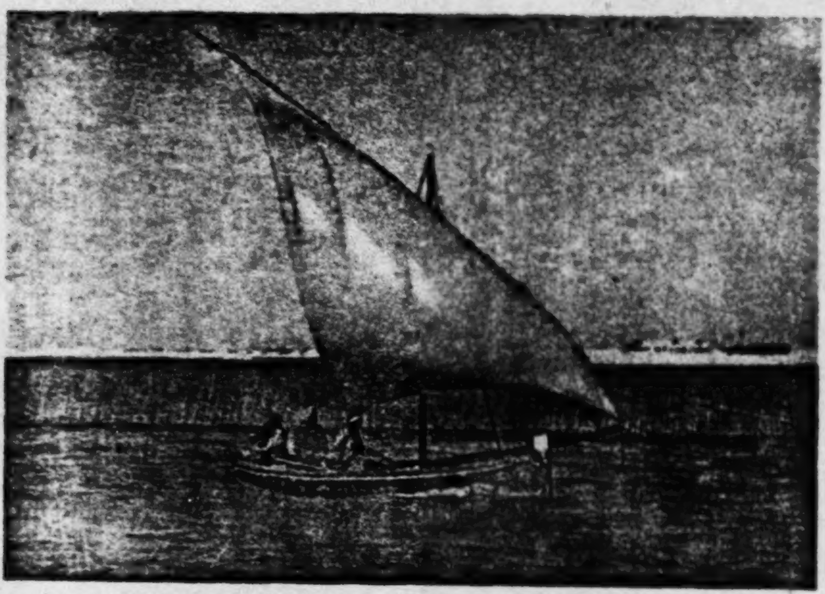

FIG. 3—Arab fishing dhow (*jalbut*) typical of eastern Arabia. The outside wing of a large funnel-type fishweir may be seen directly behind the boat.

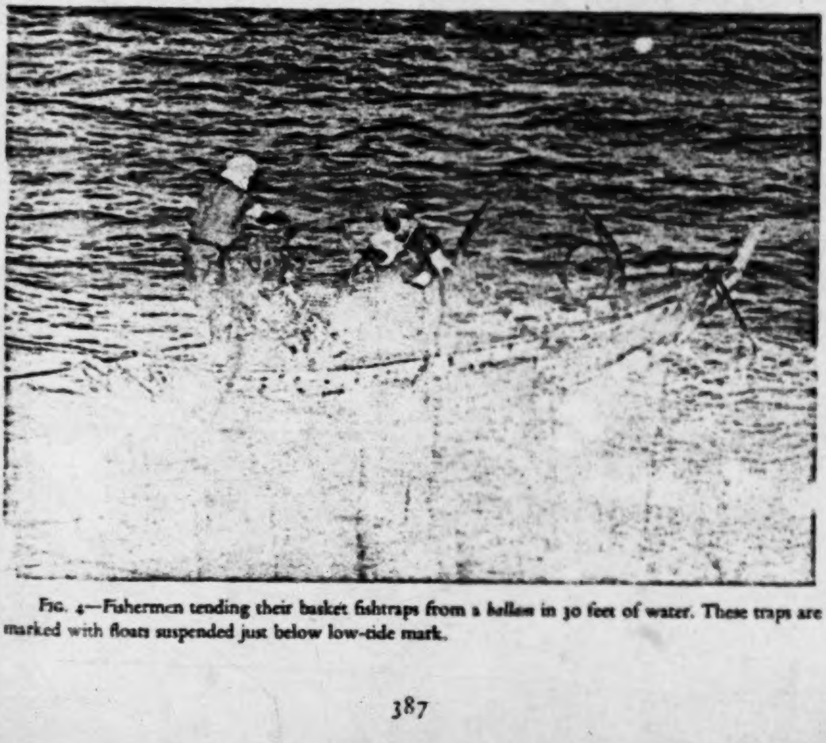

FIG. 4—Fishermen tending their basket fishtraps from a *ballam* in 30 feet of water. These traps are marked with floats suspended just below low-tide mark.

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut
Bay side of the Ras Tanura peninsula. All during the fishing season constant
maintenance is necessary (Fig. 13).

Because of its shoal water, Tarut Bay is the only place along the Persian
226 Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
suits against the Arabian American Oil Company, asserting that the change
691 in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
424 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contaminated
their weirs. These complaints were such an annoyance to the oil-company
executives that they instructed their agents to buy the fishweir
[435] rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few
Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras
Tanura area the sale was an economic blow, for much of the fish supplied to
Hasa Province came from the Ras Tanura traps.

ROCK MINING

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[2] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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501 [2] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen, Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *booms* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shewes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

wages, they are given cash advances and food during the winter and during 421
slack periods. They never seem able to pay off their debts to the dhow 465
owners.

PEARLING

The most colorful marine industry of the Persian Gulf is pearling.[3] 228
Pearling is definitely a seasonal occupation, confined to the months when 132

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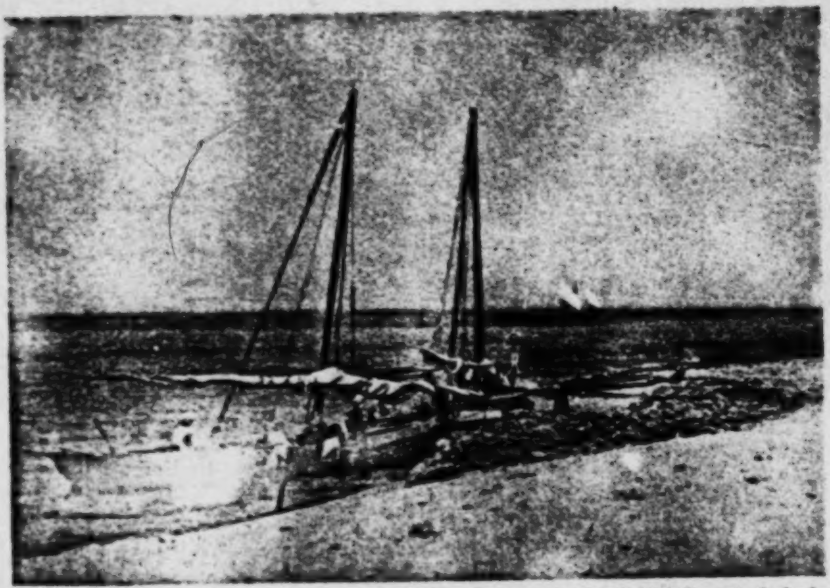

FIG. 15—Unloading hasa from jalbuts on the Ras Tanura peninsula. Two loaded dhows in the background are bringing in more.

the water is warm. On the Persian Gulf coast of Arabia the minimum winter air temperature is in the middle forties, the shallow-sea temperature in the low sixties. From long experience the Arabs have found that they can begin deepwater diving in June and continue until the first week in October. At the start and finish of the season the surface-water temperature is about 85°, but the deep-water temperature is considerably less; the maximum surface-water temperature may exceed 100° in August. Before this main season the *ghaus al-kabir* (great diving), there is a season of about two months, known as the *ghaus al-barid* (cold diving), when smaller boats work the shallower waters near their home ports; during the winter many men go out as "waders" at low tide to pick up what they can just below tide level. 113

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[3] See also R. LeB. Bowen, Jr.: The Pearl Fisheries of the Persian Gulf, *Middle East Journ.*, Vol. 5, 1951, pp. 161–180.

however, if it sighted land, it headed straight for it, showing the sailors 487 the direction of the nearest land. Certainly this would seem to indicate voyages of more daring than mere coasting voyages. There are numerous Sanskrit and Pali references to Indian trading voyages dating from about the third century B.C., and there is one Sanskrit manuscript containing a treatise on shipbuilding in ancient India, giving the sizes (ranging up to 260 feet in length) of dozens of types of ships.[3]

Zanzibar is the unofficial southern port for the lateen fleet sailing down 103 from the north, although the Indians sometimes go on to Madagascar. 487 Soon after the northeast monsoon has set in, lateen craft start to come into Zanzibar. Arabs come from the Persian Gulf ports of Basra, Kuwait, Bahrein, and Sharjah on the Trucial Coast of Oman; Persians send ships from the Persian Gulf ports of Bushire, Lingeh, Qishm, and Bandar Abbas. Arabs of the Oman ports of Sur and Muscat on the Gulf of Oman and Indians from the Gulf of Cutch and the Malabar coast all send dhows down to Africa. Arab craft also sail down from Aden and Mukalla in the Hadhramaut, while the Red Sea contributes its craft from Port Sudan, Massawa, and Hodeida. Even the Somali coast contributes to the fleet arriving at Zanzibar, with dhows coming down from Djibouti, Berbera, and Mogadiscio.

Kuwait is the largest maritime and dhow-building port in the Persian 361 Gulf, with Bahrein a very poor second. While Bahrein cannot begin to 501 compare with Kuwait from a maritime standpoint, it probably ranks ahead of the latter as an emporium in the Persian Gulf. It serves for all the entrepôt trade to the eastern coast of Saudi Arabia, the goods coming into Bahrein in large dhows and being transshipped from Bahrein to Arabia in shallow-draft *jalbhuts* (see Plate 17—top). In 1939 Kuwait had 106 ocean-going *bhums* on the registry.[4] However, the majority of the Kuwait deepwater *bhums* sail to India, rather than to Africa, carrying dates from Basra. The mariners of Kuwait probably reached their present maritime status a little over a century ago. Palgrave traveled in the Persian Gulf in 1862-1863 and was much impressed with the maritime activity of Kuwait:

> Among all the seamen who ply the Persian Gulf, the mariners of [Kuwait] hold the first rank in daring, in skill, and in solid trustworthiness of character. Fifty years since their harbour with its little town . . . was a mere nothing; now it is the most active and the most important port of the northerly Gulf.[5]

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[3] R. Mookerji, *Indian Shipping* (Bombay: Longmans, Green and Co., 1912), p. 19. 113

[4] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 399.

[5] W. G. Palgrave, *A Year's Journey Through Central and Eastern Arabia (1862-63)* (3rd ed., London: Macmillan and Co., 1866), II, 386.

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However, a century before this, Kuwait was apparently noted more for its pearl fisheries (which are still important) than for its maritime trade, as Niebuhr related that in 1763

> Kuwait is a sea-port town. . . . The inhabitants live by the fishery of pearls and of fishes. They are said to employ in this species of naval industry more than 800 boats. In the favorable season of the year, this town is left almost desolate, everybody going out either to the fishing, or upon some trading adventure.[6]

In Niebuhr's time, in the eighteenth century, the Omani sailors from Muscat and Sur on the Gulf of Oman were the famed Arab mariners, for Niebuhr related that

> The inhabitants of Oman, although not fond of sea-fights, are nevertheless the best mariners in all Arabia. They have several good harbours, and employ many small vessels in the navigation between Jidda and Basra. To this last town there come annually fifty such vessels.[7]

In the middle of the last century Muscat was still an important maritime port, for in 1854 Osgood related that

> Several ports in the Persian Gulf are tributary to it, and some excellent ships and a large number of [*baghlas*] employed in coasting and foreign trade, are owned by the Banian merchants at Muscat. In fact more than half of the trade of the Persian Gulf is carried on in ships owned at Muscat. . . . The trade with America, which is carried on chiefly by vessels from Salem does not exceed thirty-five or forty thousand dollars annually. Dates and cash are usually taken in exchange for American merchandize.[8] [439]

In the present day Muscat has completely fallen from its former prized position and given way to Kuwait and Bahrein Island in the Persian Gulf. However, the port of Sur in Oman still carries on the maritime tradition of the Omanis and maintains a considerable fleet of dhows which have long been prominent in the trading along the African coast.

501 The craft that make the trip down the African coast from Arabia are by no means all large ocean-going vessels; craft of all sizes and descriptions come into Zanzibar. Villiers[9] tells of seeing a 30-foot *jalbhut* from Oman sailing down the African coast. Having owned and sailed a *jalbhut* of about the same size in the relatively calm Persian Gulf waters, I have nothing but the utmost respect for anyone with the nerve to sail such a small open boat several thousand miles in the potentially rougher Indian Ocean.

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[6] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 127.
[7] Ibid., 122.
[8] Osgood, *Notes of Travel* (Salem, 1854), p. 81.
[9] A. Villiers, *SS*, p. 190.

cargo of fish if the local supply is not sufficient, and fish their way down 439
the Arabian and African coast, selling fish wherever they can. Then they 226
do the same thing on the way back. Mukalla is a favorite stopping place on the way down to Africa; I have seen dozens of *bedans* from Sur come into Mukalla and lay out their catch of shark or tuna on the beach to dry while they beached their dhows and put a coat of shark liver oil on their hulls (see Plate 18—top and bottom). Shark is a favorite Arab food; the [262]
flesh is cut off in strips or slabs and dried, while the liver is saved for its oil. The Arabs have little use for the tails or fins of the shark, but they are all meticulously saved and eventually find their way to China via India.

Thus these fish-bearing dhows from Oman start their trading venture from their home port, carrying a product of the port, and never carry other cargo; they trade fish from Sur to Zanzibar and back. For this trade they apparently always use the primitive *bedan*, usually ranging from fifty [501] ●
to sixty feet in length. The Suris export dates from Oman, or go to Basra for a cargo; when carrying dates they use large *sambuks* and *baghlas*.

In contrast to Arab and Persian ships which sail along the coasts the 439
whole way, whether going to India or Africa, Indian vessels usually sail 487
straight from India across the ocean for South Arabia or Africa with consignments of goods from Indian exporters at specific ports. Only rarely do they carry dates; their usual cargo consists of the products of India. From the Malabar coast they may carry coir rope stuffs, coir matting, teakwood, teak dugout canoes, coconuts, spices, cement, bricks, or tiles, while from Bombay they may pick up cotton piecegoods, groundnut oil, or tea. Most of the Indian ships that voyage to Arabia or Africa come from the Gulf of Cutch; few if any craft from Bombay or the Malabar coast carry this trade today.

In vivid contrast to the Arab date cargo and Indian cargo, which is usually on consignment, the replacement cargo for the rest of the voyage for the average Arab dhow is purchased by the *nakhoda* from the profit made on the date freight, for sale at the best market. After its date cargo has been discharged, the dhow becomes a trader in every connotation of the word, picking up and selling cargoes as she coasts south along the South Arabian and East African coast.

Sometimes the *nakhoda* may pick up a small cargo of partially spoiled dates to unload on the Africans; these the crew may wrap meticulously in fancy wrappers. At Aden the dhow may take on salt, sugar (from Java), rice (from Rangoon), canned goods, hardware, kerosene, or cotton goods and prints, and from the Hadhramaut coast the cargo may be dried shark

567 ported annually from East Africa to the Persian Gulf and Arabia.[24] The term 'human cargo' is no exaggeration, for slaves were packed in the holds of dhows with an eye only towards maximum capacity. There is an old sketch of a small dhow loaded with 156 slaves (men, women, and children) packed into the hold, on the bottom and on two bamboo decks above with only three feet clearance between decks (see Figure 3).[25]

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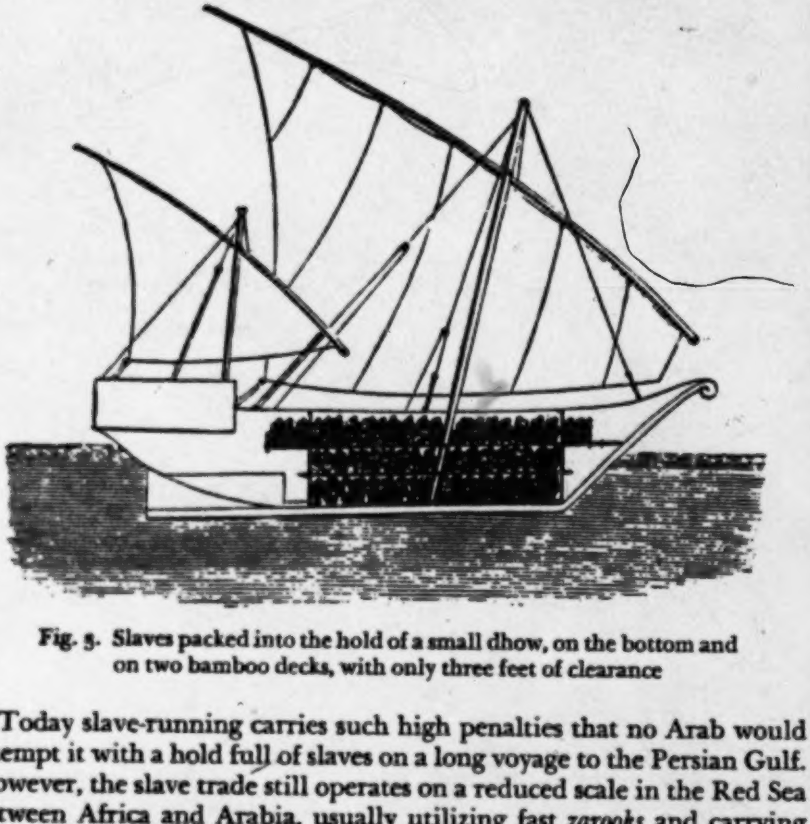

Fig. 3. Slaves packed into the hold of a small dhow, on the bottom and on two bamboo decks, with only three feet of clearance

527 Today slave-running carries such high penalties that no Arab would attempt it with a hold full of slaves on a long voyage to the Persian Gulf. However, the slave trade still operates on a reduced scale in the Red Sea between Africa and Arabia, usually utilizing fast *zarooks* and carrying only a small number of slaves. The trade is still active, mainly because both slavery and white slavery still flourish in Saudi Arabia and Yemen. These two countries signed neither of the two world conventions: the one in 1921 forbidding traffic in women and children and the one in 1933

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[24] Anonymous, 'Vessels Used in the Zanzibar Slave Trade,' *The Illustrated London News*, LXII (March, 1873), 208-209.

[25] Ibid.

502 487 whenever they are near reefs. An exception to this is the slave-runner dashing from Africa to Arabia, for his activities are best carried on under cover of darkness. The reefs in the Red Sea are the main reason why foreign dhows do not venture very far into its waters.

In the field of navigation the Arabs are little impressed with Vasco da Gama's voyage, so famous in the West.[34] The Arabs take all the credit themselves; they claim that da Gama forced an Arab pilot to show him the way to India. Arab legend relates that an Ibn Majid, a famous pilot from the Persian Gulf, was delivered to da Gama by the Sheikh of Malindi (in present-day Kenya) as a hostage for stopping the siege of the town; the Arabs immortalize this Persian Gulf pilot and associate da Gama only with European intrusion into their territories.

501 The Arab dhow is actually not a very seaworthy craft (see Plate 19—top). It manages very successfully in fair weather, but in any kind of rough weather the dhow is likely to get into trouble fast. The *baghla* is apparently considerably less seaworthy than the *bhum,* as even Arab passengers (who are not particularly well informed about anything) prefer to travel in *bhums.*[35] Apparently the great transom stern of the *baghla* tends to make the craft unmanageable in heavy seas.

In the African port of Mombasa a Casualty Book listing all dhow casualties in the vicinity of the port shows that, while there were frequent accidents with small craft and less with larger craft, there was little loss of life.[36] This stems from the Arab's method of coasting close enough to land so that he can row ashore. However, no records list the number of dhows that have gone down with complete loss of life.

If the dhow springs a leak, it may often be disastrous. On a heavily-laden dhow the crew cannot get at the leak to repair it, and not having any pumps they do not even have time to start bailing. If they can get at it, the Arabs have been known to stop a leak where a plank was stove in by filling a cloth with rice, tying a string around the gathered neck and stuffing it in the hole; when the rice expands it fills the hole tightly.

000 Villiers[37] relates that a 178-ton Indian dhow loaded with mats sprang a leak and sank off Africa because the cargo prevented anyone from getting at the leak. The crew took fifteen minutes to clear the dhow, and very soon afterwards the sea was over her decks. The early English traveler Palgrave[38] had the same thing happen to him in 1863—an event which

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113 [34] A. Villiers, *SS*, p. 197.

[35] Ibid., p. 106.

[36] Ibid., pp. 191-194.

[37] Ibid., p. 193.

[38] W. G. Palgrave, *Central and Eastern Arabia* (3rd ed., London: Macmillan and Co., 1866), II, 342 ff.

nearly put an end to his traveling. While sailing in a *baghla* Palgrave was caught in a hurricane just off Muscat; the dhow lay to and drifted. As the storm set in with violence the dhow sprang a leak and in a matter of minutes settled into the sea. After a night in a small boat, Palgrave and eight others (ten men were lost) reached a beach in Oman. Ten other dhows, part Persian and part Omani, also went down off Muscat in this storm with complete loss of life on three of the craft. 000

A heavily-laden dhow hull-down in the water is extremely vulnerable to rain storms and squalls, even if she does not spring a leak. If such a dhow is caught in a deluge of rain, it may go down very quickly, for without any pumps there is hardly time even to start to hand-bail from the small well. The smaller open-waisted boats and the decked ocean sailers catch all rain, and if enough rain comes down fast enough, the craft simply goes down. Villiers[88] relates how a huge new 500-ton *bhum* sailed out of India on its maiden voyage with a cargo of coir. Caught in a rain squall the first night, the dhow filled with water and scuttled. However, in this instance, the rain apparently swelled the coir, which in turn split the hull. Most dhows lash palm mats amidship to extend the gunwales, whether they are open-waisted or decked; however, this is not very effective in rough weather. 501

In heavy winds it is customary for the dhow to split a seam or two in its great driving mainsail. However, the sailors will tell you that weak seams have their virtues and act as a safety device to protect both the sail-cloth and the mast from serious damage in sudden blows. In very rough weather the dhow sailor douses his sail and simply allows the craft to drift, without using any steadying sails or sea anchors. Usually they are caught in water too deep for their anchor lines and feel that drifting is the safest way.

The dhow is never prepared for any emergency at sea—it copes with it as best it can when the occasion arises. The dhow never carries any life preservers, life jackets, flares, or any other safety devices. The exception to this is the many Indian deepwatermen which sport life preservers on the stern. If a man falls overboard, Arabs head the dhow up and pull him aboard after he swims to the dhow; if the currents are too strong, they lower the longboat. However, the longboat is never ready to be lowered, as there are usually no davits on a dhow, the longboat being carried on deck; thus to lower it takes considerable time. Nothing is ever secured on board a dhow, on deck or below, and in rough weather the Arab waits until something goes scudding across the deck before he fastens it down;

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[88] A. Villiers, *SS*, p. 365.

501 sometimes it is too late, for it may have already gone overboard. The Arab usually has no lines ready when he comes into a mooring and he may just as often throw a loose anchor over as not.

501 502 Dhows never show lights of any kind at night, whether under way or anchored. Although British regulations have forced many dhows from various ports on the Indian Ocean to carry lights, there is unfortunately no way of forcing the Arabs to use them. This undoubtedly results from centuries of travel in pirate-infested waters, where a light at night served only as a signal for sudden attack from pirates. There is only a weak light in the binnacle with which to see the course; everything else is dark. Not even when in the sea lanes off South Arabia, in the Persian Gulf, or in the Red Sea, where freighters and tankers beat a constant path, does the dhow show a light. In case of collision at night, the boat that can prove that it showed lights has a legal edge.

At the West Pier at Ras Tanura on the Persian Gulf, there is often considerable movement of Arab dhows and Arab *lanchs* (kerosene-driven native launches). Dhows slip in and out of their mooring like shadows on nights so black that a dirty white sail could not be seen ten feet away. One night a *lanch*, all of which carry lights, hit a rock-laden dhow amidship and in a matter of seconds sent her to the bottom in forty feet of water. Native divers unloaded her, and she was eventually salvaged. Since then, dhows make a frantic attempt to fan their coffee fires up to a bright glow when they see any *lanch* lights approaching, but they still do not carry standard lights. It is an eerie sight to see the glow of a charcoal fire suddenly light up a large lateen sail directly in your path!

501 502 721 When sailing along their own coasts, the Arabs like to sail in two's and three's. This arises from the fact that piracy is by no means a thing of the past. For centuries piracy and robbery were honorable professions among many tribes along the long Arabian littoral; such a reputation did the piratical Omani have during the last half of the last century that the very sight of their characteristic *bedans* and *batils* brought actual fear to the population of Zanzibar.[40] Niebuhr noted dangerous conditions in the Red Sea two centuries ago:

> Although from pirates properly so called, there is little to be feared in the Arabic gulfh [Red Sea], yet, so unskilled are the mariners in these latitudes, that they dare not venture to any distance from the coasts. This timorous mode of sailing might expose a single vessel to the robbery of the Arabs; to avoid which, these ships sail in little fleets; four always setting out together, that they may join to defend themselves.[41]

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113 [40] G. L. Sulivan, *Dhow Chasing* (London, 1873), p. 102.

[41] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 212.

533 tacked almost savagely as the men chant praises to Allah and stamp the
535 deck as they shuffle by for another chance at the halliard. When the yard,
502 with the sail gathered in stops, is halfway up, the sailors may stop working and go into a dance, snapping their fingers and stamping the deck. On a large ocean-going dhow of 150 tons, it takes a whole hour to masthead the yard—about one-third of which is spent in dancing and singing. On a smaller dhow there is much less organization in raising the sail, but it is usually done faster with less song and dance.

502 Once the sail is raised and the dhow is under way, the sailors' duties are usually completed for a considerable length of time. However, if the weather changes, the sail may have to be changed. Once under way it may take several hours on a large dhow to lower one sail and replace it with a smaller (or larger) sail. The course may also have to be changed at times, regardless of weather changes. The Arab dhow tacks by wearing while sailing downwind; in wearing all hands have appointed stations, where stays, tacks, and sheets must be shifted.[49]

501 There is one more important duty carried out semiannually on the great ocean-going dhows running to and from Africa and India: that is cleaning the bottom. The bottom is usually cleaned and refinished before the dhow makes its return trip (from Africa or India) and after it has finished its seasonal trip. The dhow is moved into a shelving beach at high tide, and the ship is lightened as much as possible by the removal of any cargo and its yards, which are lowered overboard. The mainmast is lowered in its gear to the aft of the V-shaped trough in which it rests. Sometimes, depending on the dhow, it is necessary to completely unship the mast; at other times it is sufficient simply to lower it so that its resistance to the wind (and thus its toppling effect) is at a minimum. It should be remembered that the mast on a medium-sized ocean-going dhow is a massive teakwood spar weighing around five tons, while on a large dhow it may run well over ten tons.

When the dhow is lightened sufficiently, it is kedged into shallow water to the songs and chants of the crew laboring on the anchor lines. With the falling tide, mangrove pole props are lashed along the gunwales on each side so that as the tide leaves the vessel dry, it is propped up on stilts. With each successive tide change, the stilts must be carefully reset, as the vessel is partially refloated. To allow a large dhow to topple over is a serious matter, as it may have to lie there until a spring tide lifts it.

When the tide has receded sufficiently, the sailors set to work remov-

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[49] For a description of 'wearing' see R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 122-129.

501 ing the old paying-stuff with scrapers. After this is removed they immediately start to put on the new compound, a mixture of tallow and lime, in thick layers with the flat of their hands. As soon as the task is finished, the dhow is kedged into deeper water, re-rigged, and is ready to sail. If no planks have to be replaced, this operation should not consume more than two or three days. A unique though rather incredible means of cleaning the bottom of an Arab dhow is recorded by Villiers,[10] who relates that, while becalmed off Oman, the sailors on the *bhum* on which he was sailing dived overboard, and scraped the sea growth off the ship's bottom while swimming slowly from side to side! The *bhum* in this instance was drawing thirteen feet of water.

505 All work on a large dhow is done by brute strength, and when the crew is working, the pace is very strenuous. All hands carry out orders day and night with the same fanatic vigor—it almost seems as though their lives depended upon the particular task they were doing at the moment. The *nakhoda* plays no favorites; when the tempo becomes too fast, those too old or feeble will drop out or be given a sea burial in a cover of palm fronds. Thus it is easy to understand why, when there is no work, all hands are to be found asleep. Thus have the dhows sailed for centuries on their unhurried voyages, and so they will probably continue for centuries. Of all the crews—Arab, Persian, and Indian—the Arabs from Kuwait attack their work with the most energy, almost fanatically.

501 535 At times the large deepwater dhows still have a pomp and ceremony about them that give them a dash of color never to be found in coastal dhows. Whenever coming into a large port that can supply the Arab sailor with the diverse entertainment that sailors of all lands expect after a long voyage, there is a great celebration. This consists of the dance so familiar among male Arabs throughout the Arab world—dull shuffling, agitating, jumping and hopping, accompanied by the loud noise of snapping fingers and moaning music from drums and tambourines. Sometimes the sailors get so wrapped-up in their dancing while entering a port that they are late in executing orders. Quite naturally, the longer a dhow has been at sea and the farther it is from its home port, the greater the celebration.

V

501 On even the largest Arab deepwatermen, the crew has no quarters, as there is no 'below'; all hands live on deck, finding the softest place they can. Usually the sailor's clothes—a nightshirt-like gown or a sarong and

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[10] A. Villiers, SS, p. 298.

501 a headdress—serve as his bedding. The Arab has not been spoiled by soft mattresses and can get a good night's rest on a floor, deck, or hard ground. The *nakhoda*, the mate, and a few selected passengers live on the poop. Sometimes an awning is spread over the poop to keep the burning sun out, and other times it is bare; sometimes a Persian rug is spread on the poop. There is invariably a cabin beneath the poop for the storage of valuable cargo and ship's stores (see Plate 22—top). This cabin is usually only the space between the continuation of the main deck and the poop deck. Sometimes there are doors leading forward, but more often it is simply open.

As there is no below on a dhow, there are quite naturally no toilets below. Dhows do carry toilets, however, in the form of one-holed privies, hung overboard off the poop (see Plate 21—bottom). They are usually on the port side, but are sometimes seen on the starboard; I once saw a large *sambuk* in Aden with two, one to port and one to starboard. These lack the privacy of a privy, and are almost completely open. Freya Stark[31] had to have the captain rig up a special awning for her when she traveled down the South Arabian coast in a dhow.

When the dhows carry passengers they are packed on the main deck like cattle. Living conditions are not too bad without passengers, but with a load of passengers, conditions immediately become foul. Ordinarily the bilge on a dhow is beyond description, but sanitary conditions become unimaginable with a load of passengers who are so packed in that they cannot all hang over the rail in rough weather. Villiers[32] tells of seeing a small 60-foot *bhum* from Oman sailing down the coast of Africa with about two hundred Omani passengers; it was estimated by the Arabs on Villiers' ship that ten of these would die before reaching Zanzibar. [704] Whenever there is a death aboard, the Arabs conduct a hasty sea burial; deaths are never reported to port authorities by the Arabs, for fear of not being cleared.

805 Although the Arab aboard ship has little concept of time as far as days go, he divides the day into four periods separated by the announcement
788 of the five daily prayers in which all good Moslems religiously indulge. Prayer time is announced by the *muezzin* (prayer caller), who may be any one of the crew or officers. The *muezzin* simply announces the time of prayer, and bears no similarity to a priest or minister, for the Moslems have none of these; their religion is voluntary. The first sound to fall on Arab ears every day is the raucous call of the *muezzin* perched on some

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[31] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 314.

[32] A. Villiers, *SS*, p. 124.

PLATE 18

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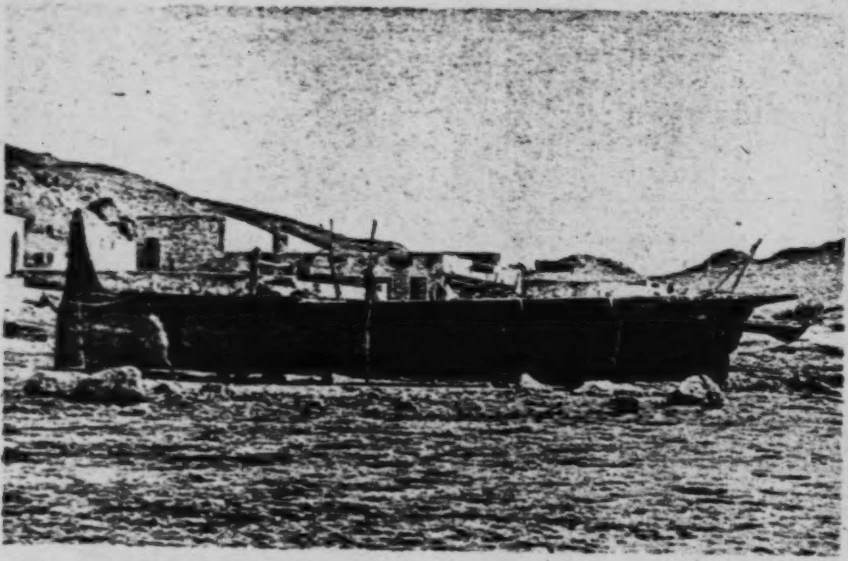

The Omani who coast down to Africa and fish along the way haul their *bedans* out periodically, lay the fish out to dry, and oil the hulls; this one is at Mukalla

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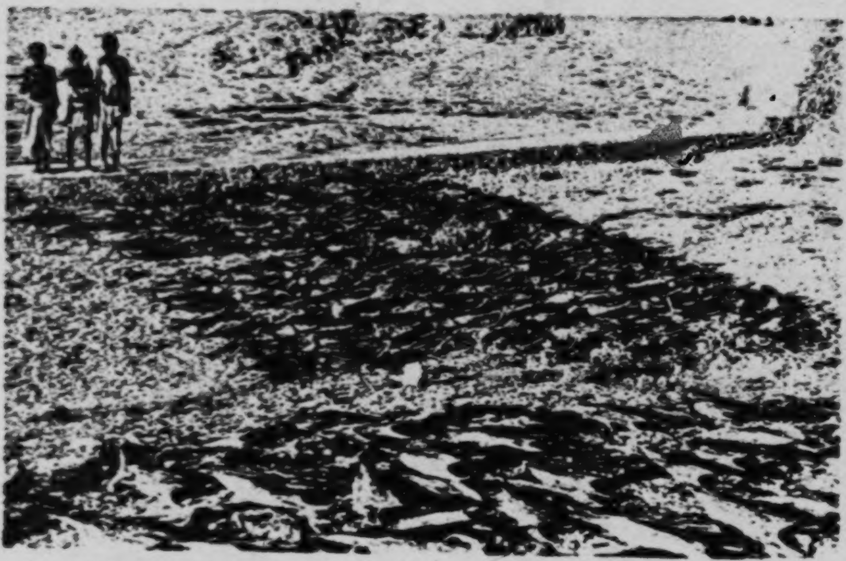

Tuna fish drying in the sun at Mukalla. The Omani carry large quantities of dried fish down the South Arabian and East African coasts, coasting down on one monsoon and back on the other

[Facing p. 190B]

White radishes	100	5	262
Lemons	40	5	
Other fresh vegetables	400	15	
10 live sheep	1100	40	
15 live sheep and goats	1500	80	
	Total Rs.	1502	

It should be noted that rice constitutes one-third of the cost. The other great staple at sea—fish—is not listed accurately, as most of it is caught fresh; probably between two thousand and three thousand pounds of fresh fish was eaten. It should also be noted that no charge occurs for water. The dhow will take a tank of bad water rather than pay for it.

The Arab dhow, regardless of its size, always has a fish-line overboard, 226
and it is not uncommon to see half a dozen lines overboard. I have caught many fish myself trailing a line from a dhow in the Persian Gulf. Villiers[88] states that fishing off the whole African coast is particularly good and that it is not uncommon for the many lines trailed from a Kuwait *bhum* to net twenty to thirty large fish a day. The fish not eaten are cleaned by [251]
splitting, are pounded in salt, and then hung in the sun to dry; the sailors never bother to scale the fish.

The galley on an Arab dhow is simply a spot on the deck. The stove 252
consists simply of an open-sided box with some sand and cooking stones 501
on the bottom (see Plate 21—top left). The larger the dhow the larger the fire-box. The cook cooks everything here with wood fires of palm wood, brush, or driftwood.

On dhows of South Arabia and the Gulf of Aden ports there is also a bread oven. I have never seen these on dhows from the Persian Gulf or Gulf of Oman. The oven consists of a wide-mouthed pot perhaps fifteen or eighteen inches in diameter; this pot is put inside a barrel about two and one-half or three feet in diameter and the space around the pot is filled with sand (see Plate 21—top right). The barrel is firmly lashed together and then is usually securely lashed to the deck. To bake bread, the cook builds a fire in the bottom of the pot and allows it to burn down to the coals. Then he takes a flat piece of dough like a large pancake and pastes this on the inside of the pot; the heat in the walls of the pot and the coals bake the bread. This is the Arab *khubuz*, one of the staples of 262
the Arab at sea as well as on land.

VI

It is difficult for one totally unfamiliar with the Arab East to understand the economic system of the Arabs. The tenets of Islam prevent any 426

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[88] A. Villiers, *SS*, p. 190.

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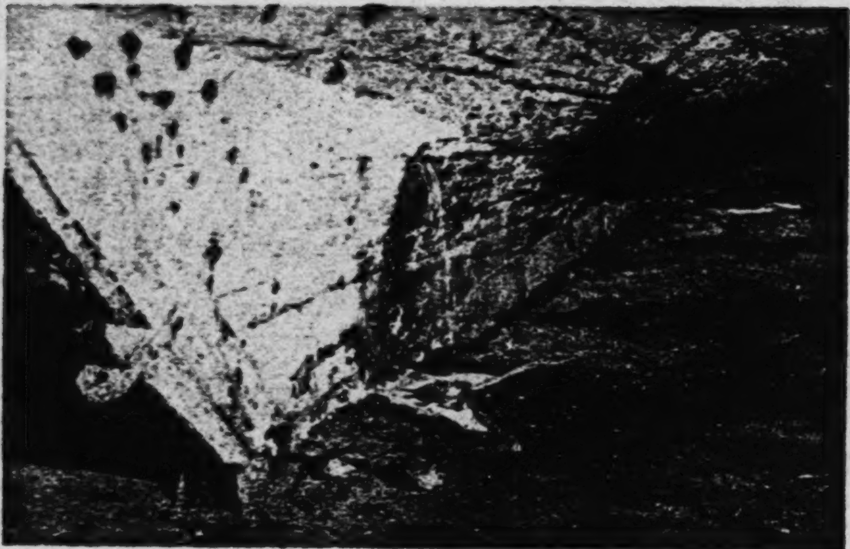

The dhow is usually not a very seaworthy craft. The photograph shows bilge water leaking through weak seams in the bottom of a large dhow drawn up on the beach

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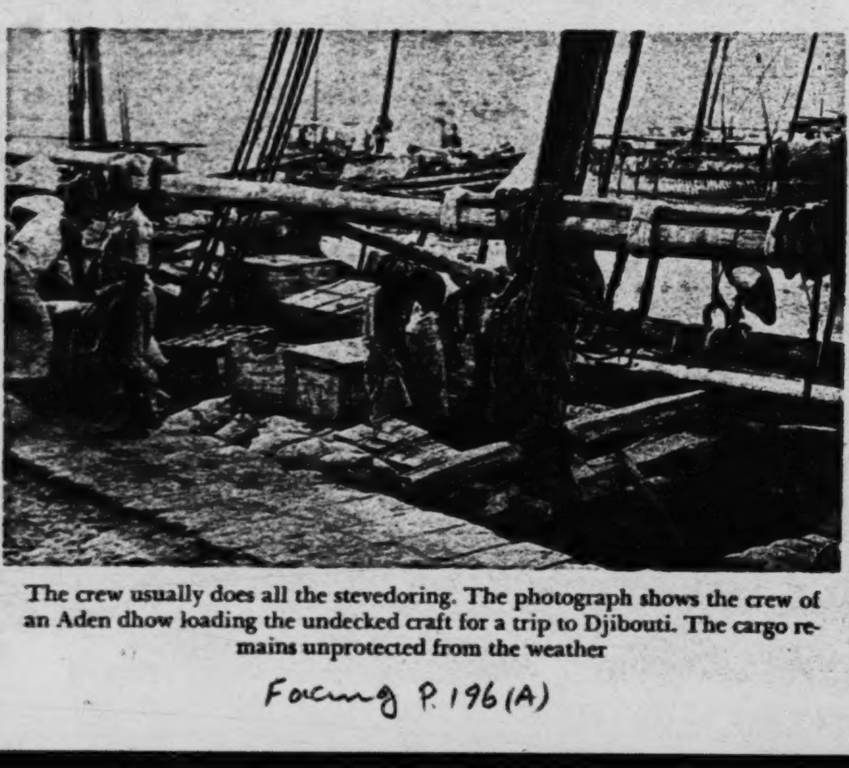
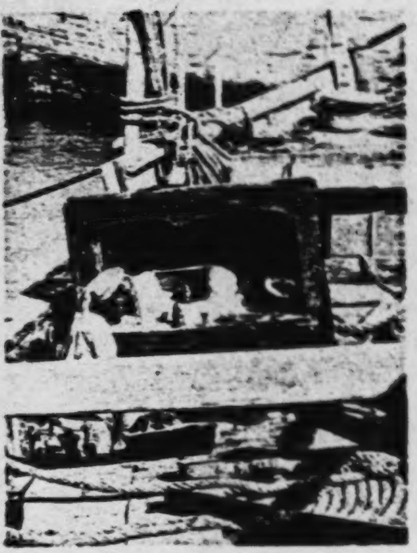


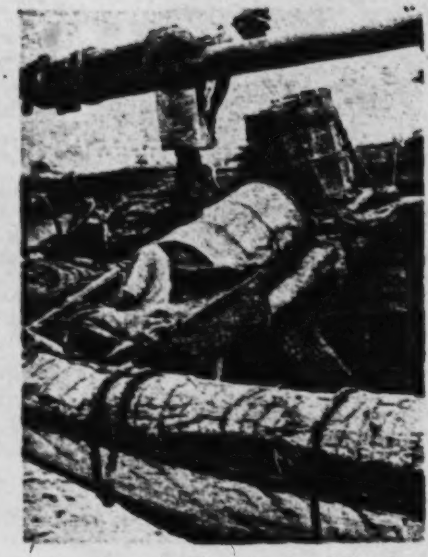
The crew usually does all the stevedoring. The photograph shows the crew of an Aden dhow loading the undecked craft for a trip to Djibouti. The cargo remains unprotected from the weather

Facing P. 196 (A)

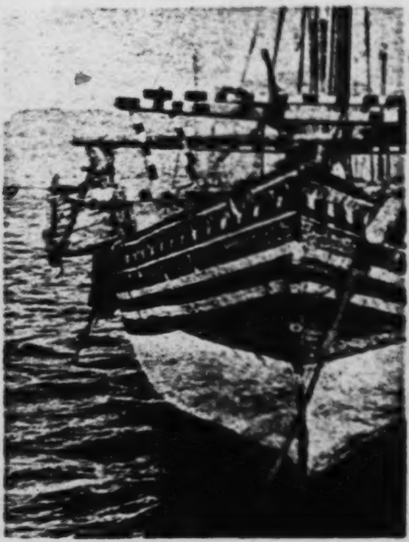
PLATE 2



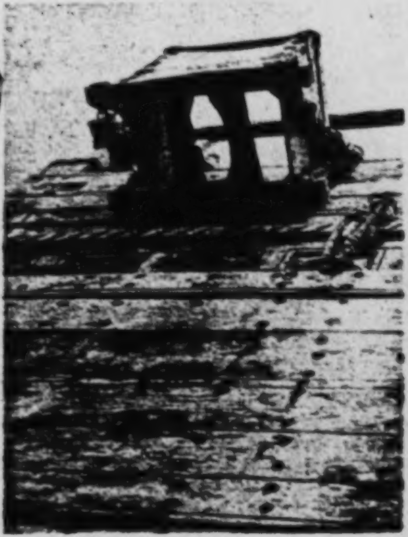
The galley on a dhow is on deck; the stove is an open-sided box



An oven on a dhow (to the right of the water drum), made of a wide mouth pot put inside a barrel of sand



The toilet on a dhow is simply an open privy hung overboard



The toilet on a large dhow as seen from below

Facing P. 196(C)

PLATE 22

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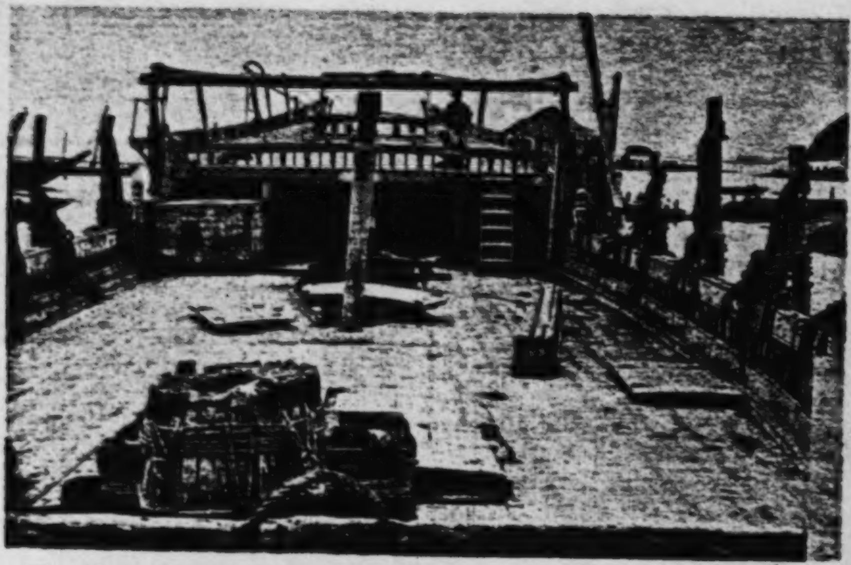
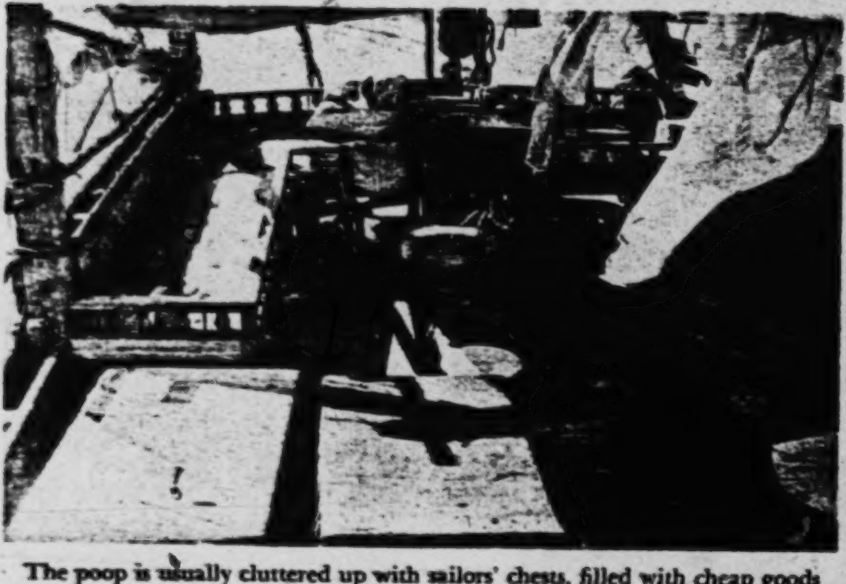


There is usually a cabin under the poop, formed by the space between the poop deck and the extension of the main deck. Note the man on the poop for an estimate of size



The poop is usually cluttered up with sailors' chests, filled with cheap goods for trade. Note the binnacle, the only navigation instrument on the dhow, a large *baghla*

[Facing P. 197]

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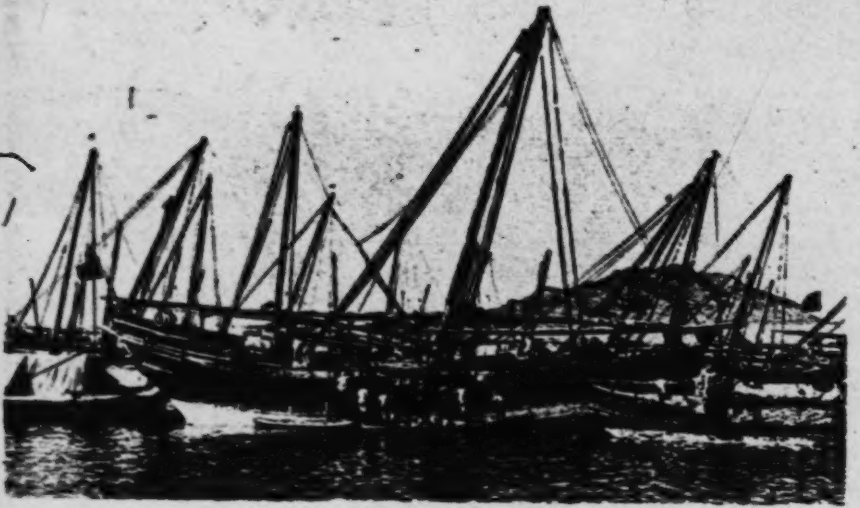
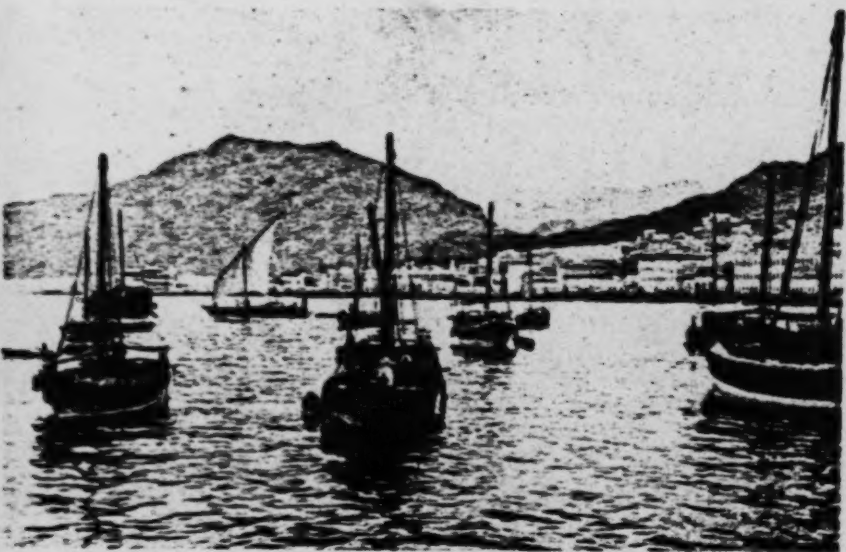


Dhows in the native anchorage at Maala in Aden. The large *baghla* in the foreground is discharging its date cargo with its longboat, the crew acting as stevedores



Dhows in the harbor at Mukalla at dusk. A *bedan* from Oman (with its sail up) is just slipping out of the harbor on its way down to Africa

Facing P. 202

Maritime Arabs MI.2
Kuwait-MI-1

M
438 All the cities along this coast north of Ras el Kheima
361 are diving communities, and some of them are quite large.
K Kuwait, the largest, has about fifty thousand inhabitants.
161 Kuwait has good harbor facilities, and the government of
228 the city has been notably efficient and strong-handed for
439 many years. A pearl diver may as well live in one coast
312 town as another, and so Kuwait has grown to be a large
262 city. The drinking water for this entire city is brought in specially constructed sailing vessels from the mouth of the Arab River in Mesopotamia sixty miles away. The divers live on rice that is brought them from India, on wheat that comes from Persia, and on sheep from inland Persia and Arabia. The only local product is fish. The physical surroundings of all these towns are very similar to those of Kuwait. The landscape is an unbroken and monotonous expanse of sand on one side
[K and sea on the other. The heat in summer is ex-
132] treme and the air is practically always moist, so that for three or four months in the summer the climate is almost unbearable.

M In the spring the diving community begins to hum
228 with activity. The boats are cleaned up and repaired.
463 New masts are put in and new rigging provided. As the time for diving approaches, supplies of food and water are taken on board. The divers collect from far and near. Most of the population are divers, and in addition many more come from a distance to dive for the season. There are men from every district in Arabia and from all over Mesopotamia; a few come even from the various provinces of Persia. The place is filled with festivities and good fellowship and hopes for a successful season.

M
228 The day for embarkation finally comes. The boats
501 are fitted with enormous sails, and also with a full com-

228 plement of long heavy oars, so that they can be indepen-
501 dent of the wind when necessary. One of these great
● diving boats moving out to sea is a sight long to be
remembered. I once watched one of the largest Dibai
[504] boats leave for the pearl banks. During the winter these
boats are hauled up on the sand within a lagoon that runs
through the city. The great boat moved majestically
down this lagoon and out to sea. There were fifteen to
twenty enormous oars on each side and each oar was
manned by two divers. The oarsmen swung down the
[461] lagoon with a stateliness that I have never seen surpassed,
the men chanting as they worked, *"A billah mal, a
billah mal,"* in a rhythm that had all the swing of a regi-
ment off to war or a football team on its way to a game.
There was a splendid silk flag flying at the stern, and the
great ship went out to sea with every small boy in Dibai
wishing he was on board. I felt the thrill of it myself,
and the Baluch boy that I had with me as a medical
assistant had hard work to keep both his feet on the
ground. "Oh *Sahib,"* he said, "it makes me want to go
with them."

However, once the pearl banks are reached, the work
is hard and dangerous. The long oars are fastened in
place so that they stretch out horizontally over the water
and to each oar a rope is tied which carries a lead weight
228 or a stone on its end. The diver stands on this weight
as he descends, in order to get down quickly. Each
diver has an assistant whose duty it is to haul up the
weight as soon as the diver reaches the bottom, so that
it may be ready for the next descent. There is a second
rope which is fastened around the diver's waist. By this
his assistant pulls him up when he gives the signal. This
assistance is not necessary if the diving is in shallow

4:Lebkicher et al U-3 (no date)1952 MII Saudi Arabia MII
Maritime Arabe MX2

MA
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SA
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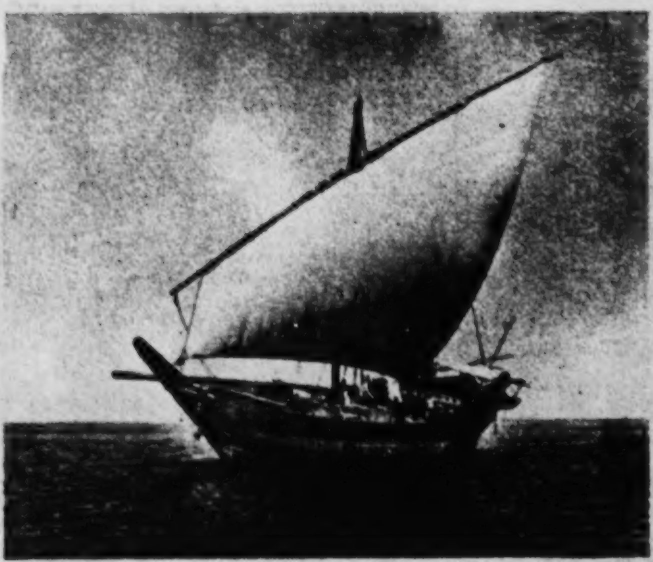
P. 29(a)

Aerial view of Hofuf, the capital city of Al Hasa province.



Typical trading dhow on the Persian Gulf.

113
● 501
228

Maritime Arabs MK2

[For information on boats and boat equipment and on the pearling industry, see MI1 Kuwait, 1: Dickson, Category 116, pp. 473 to 496.]

228 *mawarid*. O'Shea relates that in Oman the pearl is commonly referred to as *qumash,* which is also Arabic for "material" or "goods."[16]

228 133 Pearl-bearing oysters are found in most of the Persian Gulf waters in depths varying from just below low tide to 20 fathoms. On the Persian side of the Gulf the bottom falls off rapidly to the 50-fathom maximum in the Gulf. On the Arabian side the bottom slopes off gently so that there are extensive areas within the 20-fathom limit. Thus, there are few pearl oysters on the Persian side, although fine pearls have been reported from near Kharaq Island off Bushire, and from Lingeh, but these are exceptions. However, extensive pearl beds are found along the Arabian side, stretching almost continuously for 700 miles from near Ras al-Khaymah east of Sharjah on the Trucial coast, to Ras al-Misha'ab south of Kuwait, the best beds being between 5 and 10 fathoms. The most productive are located to the north and east of Bahrein Island; this is probably why Bahrein has been the pearl center of the Persian Gulf. However, Dr. A. E. Alexander, a leading authority on pearls who visited the banks in 1947, estimates that only 35 percent of the Gulf pearls come from around Bahrein Island; the remainder comes from the Trucial Coast and from the banks near Kuwait.

228 ●502 825 The success of any pearling season seems to be as unpredictable as the habits of the pearl oysters themselves; the oyster beds shift periodically so that their exact location is not known until the diving starts. Sometimes the pearls are plentiful and valuable, at other times they are neither. Sometimes a bank is sterile for several seasons; then the next it may yield all the highest quality pearls. None of the banks are charted; each *nakhoda* has his own knowledge of them and his own theories. Arab experts believe that the largest, most dense, and whitest pearls come from deep water, while shallow water yields only low density pearls tinted with some color. Some of the more pessimistic Arab observers claim that the Persian Gulf fisheries never yield over two first-quality necklaces in any one season.

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[16] Raymond O'Shea, *Sand Kings of Oman* (London, 1947), p. 133.

THE PEARLING FLEETS

The bulk of the main pearling fleets sticks together, the Ku- 502
wait fleet moving down the coast while the Bahrein fleet moves 228
up. The pearlers of the Trucial Coast follow the banks from Ras al-Khaymah to Qatar, a straight-line distance of over 400 miles. The Oman pearlers never go above Halyl Island; they work various areas around the islands in small fleets of 10 to 20 boats, the smaller vessels usually working the grounds nearest their home ports. A pearler assumes a position on the edge of a bank so that by paying out anchor line it will drift across the bank. When the divers begin to bring up only a few oysters, the boat is allowed to drift to a new position. After it has worked completely across the banks, the crew moves it back with the sweeps, to chants and drum beating. It is here that the true skill of the *nakhoda* comes into play — to keep his ship over virgin beds. When day ends the large ships stay on the beds and the crew settles down for the night; the smaller ships usually make for a protected anchorage.

Estimating the number of dhows and men employed in the 228
Persian Gulf pearl fisheries is similar to estimating the popula- 464
tion of the Arabian Peninsula. The published figures are largely based on Arab guesswork; most of them are probably much too high. Registers of a sort are kept in every town and port along the coast sending boats to the fisheries, so that figures do actually exist. But these are not published, and an accurate count would necessitate a survey of the whole long Gulf littoral.

In one of the earliest European references to pearling in the Persian Gulf, Niebuhr states that in 1763 the inhabitants of Kuwait lived by the fishery of pearls and fishes, and were said to employ more than 800 boats in these tasks.[11] Over half a century later, Wilson estimated that the pearl fishing boats on Bahrein amounted to about 1,500.[12] In a short account of pearling on the Trucial coast, Whitelock states that in the 1840's there were said to be something over 3,000 boats in the Gulf fisheries.[13] Whitelock adds that the smallest boats had 5 men and the

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[11] Carsten Niebuhr, *Travels Through Arabia* (Edinburgh, 1792), p. 127.

[12] D. Wilson, *op. cit.*, p. 285.

[13] H. H. Whitelock, "An Account of the Arabs of the Pirate Coast," *Trans. Bombay Geographical Soc.* I (1844), pp. 42, 45.

228 for the minimum winter air temperature to be in the middle
464 forties; during this period the sea water temperature in shallow
132 water will be in the low sixties.

228 Pearl diving requires that the diver's body be almost continu-
147 ally in the water. From experience the Arabs have found that
464 the surface water temperature has to be about 85° F. before
132 continued deep-water diving is feasible; thus the main pearling season (*al-ghaws al-kabir,* or "great diving") averages four months — from June into the first week of October. During this time the maximum surface water temperature exceeds 90° F. (in August) off Hasa. O'Shea states that on the Trucial Coast *al-ghaws al-kabir* often lasts until late October, the water apparently remaining warmer longer there than further north.[19] In addition to *al-ghaws al-kabir,* there are two other seasons: the "cold diving" season (*al-ghaws al-barid*) running from April to May, and the *mujannah,* running from October to March. The smaller boats run out in the shallower (warmer) waters for *al-ghaws al-barid* and act as a barometer for the season, while the *mujannah* is worked by waders who work along the shore when the tide is out, many equipped with glass-bottom "look boxes."

527 For *al-ghaws al-kabir* the various fleets, whether from Kuwait,
228 Bahrein, or the Trucial Coast, leave port en masse with flags flying, to the beating of drums and Arab chants. The few boats from the smaller ports slip out without fanfare. It is a stirring sight to see these fleets of dhows maneuver with their sweeps and then set forth under huge spreads of lateen sails, with their freshly oiled, burnt-brown hulls glistening across the aquamarine water, like some ancient Phoenician or Roman fleet.

228 An admiral represents the pearl fishing fleet of each port. It
502 is the admiral's boat which leaves the port first, and the admiral's duty to determine when the water becomes too cold for continuous diving. It is considered improper (by the owners) for the *nakhoda* of any large vessel to leave the pearl banks before the admiral leaves.[20]

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[19] R. O'Shea, *op. cit.*, p. 137.

[20] The admiral of al-Khobar, Saudi Arabia, now works for the Arabian American Oil Company, for al-Khobar no longer sends vessels out to the pearl grounds.

● [502] One of th[e]se Submarine springs,
228 located a few miles north of Jubail, has been marked by a spar
312 buoy by order of King Ibn Saud.

228 165 O'Shea states that while the divers on the Trucial Coast are rarely attacked by sharks, about 30 were attacked and two killed around 1940.[27] Whitelock states that the Arabs claimed that the danger of sharks was ever present, but that their worst fear was from the saw fish, which had been known to cut divers completely in two.[28]

228 325 136 Rihani writes that what the Persian Gulf pearl diver dreads most is the *dawl*. However, he apparently does not realize what the *dawl* is, merely quoting Sheikh Khalifah ibn Muhammad al-Nabhani's *History of Bahrein:* "The *dawl* is a semi-fluid animal, about the size of a man's hand, round in shape, with a multitude of tendons about two feet in length, resembling a network of silk. It has no power of locomotion, but is driven by the waves and currents hither and thither. If it comes in contact with the body of man, it burns it, leaving a deep scar; and if it is lifted out of the water and left in the sun for five minutes, it dissolves."[29]

The zoologist will immediately recognize this description of the *dawl* as a jellyfish. It is in fact a small bell-shaped jellyfish with two to three foot-long tentacles. The *dawl* swims at any level and is practically invisible underwater; thus the divers cannot keep away from the stinging tentacles, which will burn the body and can put out an eye. Along the Ras Tanura peninsula, the *dawl* is most often seen near the surface shortly before flood tides.

136 There is a species of needle urchin (*Diadema*) in the Persian Gulf with spines from one or two feet long.[30] It is known that these spines will produce nasty slow-healing wounds if bumped into under water. This urchin may be the cause of some of the open sores on the divers' legs, although salt water alone could cause them, for the Persian Gulf has the highest salt content of all the ocean bodies, and constant immersion in salt water is known to produce a rash. However, as the *Diadema* is black and several

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[27] *Ibid.*, p. 158.

[28] H. H. Whitelock, *op. cit.*, p. 43.

[29] A. Rih[illegible] *op. cit.*, p. 280.

[30] *Diadema* was first reported from the Persian Gulf by this author: A. H. Clark and R. LeB. Bowen, Jr., "Echinoderms of Saudi Arabia," *American Museums Novitates*, No. 1390 (1949).

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Fig. 15—Emir Nasir of Darin with a season's crop of pearls from his pearling jalbuts.

Pearl oysters are found from low-tide level to 20 fathoms. There are pearl beds off the whole Arabian coast from Bahrein to Ras al Mish'ab, but the best banks are north and east of Bahrein Island, and the best beds between 5 and 10 fathoms. The beds are not charted; indeed, this would be useless, since they shift periodically. A bank may be sterile for several years and then suddenly produce the finest pearls of the season. The Arabs believe that the best pearls—the largest and whitest—come from deep water, though some of the more pessimistic say that the Persian Gulf never yields more than two first-class necklaces in any one season.

527 The pearling boats leave Bahrein, Kuweit, and the Trucial Coast of Oman for the main season en masse to drum beating and chants, but the
502 few dhows from the Saudi Arabian ports slip out unceremoniously. The Bahrein fleet works up, the Kuweit fleet works down, and the small Saudi Arabian fleet works in the middle.

The *nakhoda* (captain) of a pearling dhow orients his craft at the edge of a bed so that when the anchor line is paid out, the dhow will drift across the bed. When the divers start to get only a few oysters, the dhow is allowed to drift a little. When it is completely across the bed, the crew moves it back to a fresh location with the sweeps, to the accompaniment of drum beating and chants. It is here that the nakhoda shows his real skill and knowledge, for he must keep his craft in virgin water.

223 Pearl diving in the Persian Gulf is essentially "skin diving." The diver wears only a loincloth and leather fingers to protect his fingers from sharp
292 coral and shells; a horn noseclip and cotton or beeswax to stuff into his ears complete the "equipment." The use of drags, dredges, or compressed-air diving suits has been prohibited by the British, long the protectors of the Persian Gulf, and only the inhabitants of the Gulf—Arabs and Persians—can work the pearl fisheries.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

164 Pearl divers suffer from a variety of diseases, most of which can be
directly traced to their occupation. Open sores and skin ulcers result from
752 encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

262 Divers never eat while they are working. When the day's diving is
461 finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

228 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an
312 abundance of fresh water into the water tanks of the dhows much faster
502 than it can be transferred by waterskins. The larger vessels anchor for the
438 night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

228 Pearls are sometimes bought on the pearl banks by brokers who travel
442 around in their own boats trying to get the best pearls before other brokers
439 hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they
all end up in Bombay

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

* * *

The Dhow Sailor[1]

BY RICHARD LeBARON BOWEN, JR.

I

487 SINCE time immemorial, cargo has been transported in sailing ships up and down the South Arabian and the East African coasts. As the medieval Sinbads and the ancients before them had done for countless centuries, so are the Arabs, Indians, and Persians today transporting cargo in sailing ships up and down these same shores. Today these sailors operate the last great fleet of deepwater sailing ships in the world, and because of the special circumstances, this fleet will probably sail on for many more centuries oblivious to the changing pace of life around it. Life for these modern sailors has changed little in the thousand years that have passed since the adventures of Sinbad the Sailor were recorded in *The Thousand and One Nights.*

502/132 The Arabs, Indians, and Persians are still able to sail their fleets of

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114 [1] Credit for this article belongs in large part to Mr. Frederick Hunt, who, after reading the author's 'Arab Dhows of Eastern Arabia' in THE AMERICAN NEPTUNE, wrote to the Editor and asked if a follow-up might be possible, 'telling something of actual life aboard a dhow, how the crew lives, watches they stand, living conditions, what they eat, their wages, etc.' Mr. Hunt's outline has been followed almost to the letter, with some additional material added to round out the study.

Shortly after the first draft of the article was finished, the writer was very fortunate to become a member of the American Foundation for the Study of Man Arabian Expedition, which conducted archaeological investigations in South Arabia during the winter of 1950. Almost a month spent at Aden and on the south coast of Arabia, enabled the writer to collect much valuable additional first-hand data on the life of the dhow sailor. The writer is indebted to Mr. Wendell Phillips, leader of the expedition, for his assistance in making this particular phase of the study possible. The writer is deeply grateful to Prof. W. F. Albright, vice-president of the American Foundation for the Study of Man, for his guidance and assistance in numerous details in the work. The writer is also indebted to Dr. Philip K. Hitti for valuable advice on certain points.

In doing any work on the subject of dhows, one must consult what Alan Villiers has written on the subject. By sailing with the Arabs on their dhows for almost a full year Mr. Villiers has obtained an intimate picture of the dhow that the casual observer will completely miss, or the serious worker may not be able to get, as the Arabs are rather suspicious of Europeans who investigate their activities too closely. The writer of this present article has drawn on Villiers' material to round out certain aspects of this article and to supply various facts and figures for which Villiers 113 alone is the source. Most of such material has been taken from his entertaining book, *Sons of Sinbad* (New York: Charles Scribner's Sons, 1940), which in further reference will be abbreviated to A. Villiers, *SS.*

A description of the various types of dhows mentioned by their Arabic names in this article will be found in R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 87-132, and R. LeB. Bowen, Jr., *Arab Dhows of Eastern Arabia* (Rehoboth: Privately printed, 1949).

502 lateen-rigged dhows, which operate in the main without the aid of en-
132 gines, partly because of the amazing predictability of the monsoon trade winds. For millenniums the northeast monsoon has started unfailingly about October and blown for six months, until the southwest monsoon set in about April and continued for the next six months. By a strange coincidence, these winds blow virtually parallel to the South Arabian and East African coasts. The Arabs ride their lateeners down from the north on one wind and return on the other. So convenient is the arrangement that it is probably one reason why the fair-weather lateen rig has persisted for so many centuries on the deepwater dhows in the waters of the Indian Ocean.

487 The *Periplus of the Erythraean Sea* (written by an anonymous Egyptian-Greek sailor in A.D. 50) tells us that the secret of the periodicity of the monsoons was discovered by Hippalus somewhat earlier and that 'from that time to the present day' ships bound for India from the Red Sea or South Arabia set a course 'straight out to sea.' It should be noted that Hippalus' find was a 'discovery' only from the Egyptian and the Greek point of view, as he discovered a secret that Indian and Arab mariners may have been carefully attempting to hide from Egyptian and Greek sailors. The original discovery of the fact that one could 'sail straight out to sea' and reach India from South Arabia, rather than by coasting, was more of a geographical than a meteorological discovery, for it was a realization of the southern projection of India (see Figure 1). Certainly no sailor in a sane mind would set a course 'straight out to sea' from South Arabia if he thought that the lands around the Erythraean Sea were oriented as shown in Figure 2.

The South Arabian kingdoms long maintained a monopoly of carrying the goods of the East via camel to the West. The Arabians collected the products of India and East Africa at the southern terminal of the famous incense route and sent these north, along with their own products, in huge camel caravans; the recipients in the north thought that all the products they received originated in South Arabia. Many writers have stated that the South Arabian kingdoms were doomed when the West discovered the secret of the periodicity of the monsoons. However, this writer feels that the monsoons had little to do with it; more important was the discovery that many of the coveted products thought to be indigenous to South Arabia actually originated in East Africa and India. After this fact was discovered, Greek and Roman shipping entered the Indian Ocean; in opening up trade with India and Africa they immediately started to slash the revenue of the South Arabians. It should be

486 difficult, if not impossible. When shipping out of a port, an Arab simply gets approval from the port police and moves his chest aboard. However, in Africa some ports will not allow passengers to discharge; to get around this, the Arab *nakhoda* sometimes obtains permission for shore leave for some of his passengers, and brings back a different group, who want to leave. Sometimes as much as twenty per cent of a passenger list of several hundred may be shifted in a port, but the dhow still leaves with a full complement, so everyone is happy.

Regulations are a challenge to the Arab, although some of his disregard for regulations may be classed as nothing less than pure thievery. Villiers[21] relates how a Persian dhow managed to load two hundred tons of salt stolen from the Italians at Haifun in 1939. The salt was successfully loaded at night from small canoes, but the dhow was apprehended just as it was ready to sail, and the *nakhoda* was thrown into jail.

III

502 487 Arab navigation, on the run from Arabia down the African coast or over to India, is little more than dead reckoning, and a poor brand at that. The only instrument the large Arab craft carries is a compass, which is assumed to give a true reading. Most Arabs have never heard of compass deviation and will not believe that a compass can give anything but a true reading. Besides a compass, the deep sea dhows sometimes carry a chart, which may be of surprisingly recent origin or of surprisingly ancient origin; Villiers[22] tells of once seeing an Arab pilot armed with a chart of the Indian Ocean corrected to 1746! A few Arabs carry Isa Kitamis' *Directory of Eastern Seas* in Arabic, which contains many useful descriptions of the landmarks which may be encountered.

However, as the Arab navigates, a 1746 chart and a faulty compass are ample for his needs, for he simply coasts along, usually in sight of land. Going down to Africa, he sails before the wind with land to starboard; returning he sails before the wind with land to port. The seas that he sails are like a book to him, and he seldom needs his chart; this is possible, as there are no reefs along the African way. When going to India the Arab proceeds in the same manner, coasting along. In going to Africa, the Arab may get out of sight of land while crossing the Gulf of Aden, but it is only a matter of a day or so, as the land is mountainous and high on both sides of the Gulf. In sailing the waters of the Persian Gulf, the dhow

is often out of sight of land, at least on the Arabian side, as the Arabian side is treacherous and the coast low and sterile.

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[21] Ibid., p. 112.

[22] Ibid., p. 149.

A dhow sailing from the Persian Gulf to Africa or to India does not actually go at all out of the way by coasting, as a glance at a map will show. This practice of coasting has the added advantage of keeping the dhow within easy rowing distance of land in case the ship should go down, a possibility never overlooked.

In contrast to the Arabs and the Persians, the Indians still navigate their dhows over open ocean from India. However, a glance at the map will show the reason—craft from India would have to go far out of their way to coast to Africa in sight of land. Thus by necessity the Indians have maintained the knowledge of navigation that the Arabs and Persians had mastered so successfully in medieval times; being able to get along successfully by coasting their deepwater craft, the Arabs and Persians have lost the navigational knowledge which in medieval times brought them in contact with junks from China in the waters farther east. When the Arab has to sail a navigated course, he usually, though somewhat reluctantly, gets an Indian navigator. It is interesting to note that the ancient mariners in Greek and Roman times successfully navigated the southern route to India using only the sun and the stars; the mariners' compass was not invented until the Middle Ages.

There is one other alleged aid to navigation in the Indian Ocean that was known to the ancients. Niebuhr traveled from Arabia to India via dhow in 1763 and related that

> The passage between Arabia and India was formerly thought very dangerous. Ships were carried on by so rapid a current, that they could neither keep their reckoning, nor distinguish the coast during the rainy season: several were consequently lost on the low coasts of Malabar. These misfortunes have ceased to take place, since an observation was made, which has been thought new, although Arrian speaks of it being known to the ancients; in the Indian Ocean, at a certain distance from the land, a great many water serpents, from 12 to 13 inches in length, are to be seen rising above the surface of the water. When these serpents are seen, they are an indication that the coast is exactly two degrees distant. . . . We saw some of these serpents, for the first time, on the evening of the 9th of September; on the 11th we landed in the harbour of Bombay.[33]

On the run down to Africa the Arabs sail by night as well as by day; at night they make sure they are well out at sea and set a safe course by the compass. With its many reefs the Red Sea is an exception, for even local craft with a knowledge of the way anchor by night and sail by day

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[33] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 373.

502 487 whenever they are near reefs. An exception to this is the slave-runner dashing from Africa to Arabia, for his activities are best carried on under cover of darkness. The reefs in the Red Sea are the main reason why foreign dhows do not venture very far into its waters.

In the field of navigation the Arabs are little impressed with Vasco da Gama's voyage, so famous in the West.[34] The Arabs take all the credit themselves; they claim that da Gama forced an Arab pilot to show him the way to India. Arab legend relates that an Ibn Majid, a famous pilot from the Persian Gulf, was delivered to da Gama by the Sheikh of Malindi (in present-day Kenya) as a hostage for stopping the siege of the town; the Arabs immortalize this Persian Gulf pilot and associate da Gama only with European intrusion into their territories.

501 The Arab dhow is actually not a very seaworthy craft (see Plate 19—top). It manages very successfully in fair weather, but in any kind of rough weather the dhow is likely to get into trouble fast. The *baghla* is apparently considerably less seaworthy than the *bhum,* as even Arab passengers (who are not particularly well informed about anything) prefer to travel in *bhums.*[35] Apparently the great transom stern of the *baghla* tends to make the craft unmanageable in heavy seas.

In the African port of Mombasa a Casualty Book listing all dhow casualties in the vicinity of the port shows that, while there were frequent accidents with small craft and less with larger craft, there was little loss of life.[36] This stems from the Arab's method of coasting close enough to land so that he can row ashore. However, no records list the number of dhows that have gone down with complete loss of life.

If the dhow springs a leak, it may often be disastrous. On a heavily-laden dhow the crew cannot get at the leak to repair it, and not having any pumps they do not even have time to start bailing. If they can get at it, the Arabs have been known to stop a leak where a plank was stove in by filling a cloth with rice, tying a string around the gathered neck and stuffing it in the hole; when the rice expands it fills the hole tightly.

000 Villiers[37] relates that a 178-ton Indian dhow loaded with mats sprang a leak and sank off Africa because the cargo prevented anyone from getting at the leak. The crew took fifteen minutes to clear the dhow, and very soon afterwards the sea was over her decks. The early English traveler Palgrave[38] had the same thing happen to him in 1863—an event which

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[34] A. Villiers, *SS*, p. 197.

[35] Ibid., p. 106.

[36] Ibid., pp. 191-194.

[37] Ibid., p. 195.

[38] W. G. Palgrave, *Central and Eastern Arabia* (3rd ed., London: Macmillan and Co., 1866), II, 342 ff.

501 sometimes it is too late, for it may have already gone overboard. The Arab usually has no lines ready when he comes into a mooring and he may just as often throw a loose anchor over as not.

501 Dhows never show lights of any kind at night, whether under way or
502 anchored. Although British regulations have forced many dhows from various ports on the Indian Ocean to carry lights, there is unfortunately no way of forcing the Arabs to use them. This undoubtedly results from centuries of travel in pirate-infested waters, where a light at night served only as a signal for sudden attack from pirates. There is only a weak light in the binnacle with which to see the course; everything else is dark. Not even when in the sea lanes off South Arabia, in the Persian Gulf, or in the Red Sea, where freighters and tankers beat a constant path, does the dhow show a light. In case of collision at night, the boat that can prove that it showed lights has a legal edge.

At the West Pier at Ras Tanura on the Persian Gulf, there is often considerable movement of Arab dhows and Arab *lanchs* (kerosene-driven native launches). Dhows slip in and out of their mooring like shadows on nights so black that a dirty white sail could not be seen ten feet away. One night a *lanch*, all of which carry lights, hit a rock-laden dhow amidship and in a matter of seconds sent her to the bottom in forty feet of water. Native divers unloaded her, and she was eventually salvaged. Since then, dhows make a frantic attempt to fan their coffee fires up to a bright glow when they see any *lanch* lights approaching, but they still do not carry standard lights. It is an eerie sight to see the glow of a charcoal fire suddenly light up a large lateen sail directly in your path!

501 When sailing along their own coasts, the Arabs like to sail in two's and
502 three's. This arises from the fact that piracy is by no means a thing of the
721 past. For centuries piracy and robbery were honorable professions among many tribes along the long Arabian littoral; such a reputation did the piratical Omani have during the last half of the last century that the very sight of their characteristic *bedans* and *batils* brought actual fear to the population of Zanzibar.[40] Niebuhr noted dangerous conditions in the Red Sea two centuries ago:

> Although from pirates properly so called, there is little to be feared in the Arabic gulfh [Red Sea], yet, so unskilled are the mariners in these latitudes, that they dare not venture to any distance from the coasts. This timorous mode of sailing might expose a single vessel to the robbery of the Arabs; to avoid which, these ships sail in little fleets; four always setting out together, that they may join to defend themselves.[41]

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113 [40] G. L. Sulivan, *Dhow Chasing* (London, 1873), p. 102.

[41] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 212.

5 ~~05~~ overboard, and would have to be bailed out again. Other everyday duties may consist of ropemaking and sail-sewing (see Plate 20—bottom).

502 Before the sailing duties of the crew can be fully visualized, one must understand how a dhow is rigged. The ocean-going variety is invariably two-masted, although some of the smaller ocean-going craft, that should more properly be classed as coasters, have a single mast. Most large ocean-going dhows can raise a third mast far aft as a sort of jigger if they so desire; this mast and sail are usually borrowed from the longboat. These large dhows never carry this third mast as standard rigging; it is erected temporarily only when needed.

Usually when sailing before the wind large dhows carry only their great mainsails; there is little advantage in raising the smaller mizzen when sailing dead downwind with the mainsail up. However, when sailing downwind in a quartering wind, the mizzen is often raised in addition to the large mainsail. Many of the Indian and some Persian *baghlas* can send up a lateen topsail over the mainsail. Like the ornate carved stern of the *baghla,* which was presumably copied from European galleons, these topsails were probably also copied from the Europeans.[47] It is interesting to note that the *bhum,* which has risen to prominence as an ocean sailer in the last century, apparently never carries such a topsail.[48] The trend among the Arabs is to the least number of sails possible; the Arabs do not consider the setting of a topsail or a jiggermast and sail worth the effort, and few Arabs even carry a topsail.

When going to windward in light airs most large ocean-going dhows can set four sails: the lateen mainsail, the lateen mizzen, the lateen jigger, and a jib. The jib is rigged from the end of a light boom extended over the stemhead. With a big jib on, the jigger will help balance the canvas and ease the steering, but the Arabs still usually consider it too much trouble to set the jigger.

Thus, while some of the large ocean-going dhows have five different sails (main, mizzen, jigger, jib, and topsail) which they can set, they often carry only the mainsail. In adhering to their policy of a few big sails, rather than a number of small sails, the Arabs usually carry three different sizes of mainsails and two different sizes of mizzens. They adjust the size of the main to take care of the wind and try not to set any other sails. However, in light airs, they are often forced to set more canvas, but do it grudgingly.

The mainmast and yard on an ocean-going dhow are nothing less than

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[47] R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), Plate 9.

[48] A. Villiers, *SS*, p. 277.

4: Bowen C-5 (1950) 1951 MK2 Maritime Arabs MK2

gigantic. The mainmast on a large two-masted dhow is about seventy-five per cent of the overall length of the craft; for a 150-ton dhow it is a massive tree trunk that will tower more than seventy-five feet above the deck and have a diameter of over two feet. The mast is not tapered much, being only slightly smaller at the top than at the bottom. The huge size is necessitated by the fact that, because of the way the Arabs sail, the mast must at times stand unsupported with the sail raised and working. The main yard is equally massive, attaining almost the overall length of the vessel but having a diameter only about one-half that of the mast. The yard is a tapered spar made of stout poles fished and lashed together. On a 150-ton dhow the main yard may weigh over three thousand pounds and the largest mainsail may weigh up to one thousand pounds. This four-thousand-odd pounds of teakwood and cloth is raised solely by manpower using a two-part, twofold purchase. 502

When the dhow is ready to sail, the longboat must be hoisted and stowed, and the anchors must be raised. In rough weather a large dhow may lay down four or more anchors, as the moorings are usually foul. The anchors are raised to the surface without any tackle, and then they may be brought aboard by a fall from the masthead.

Before the mainsail may be raised on an ocean-going dhow the huge sail must be bent to the massive yard by a series of robands along the whole head. After the sail is bent to the yard, it is secured lightly in stops, so that the yard may be hoisted with the sail neatly furled on it. After the yard is finally mastheaded and the halliards belayed, the sail may be released by a tug on the sheet, which breaks the sail out of the stops. The sheet acts as a rip cord and sends the sail billowing out like a parachute; if the breeze is light, the sail will flutter out like a flag, but if the breeze is fresh, the sail will open with a cannon-like roar. On smaller coastal dhows the sail is not gathered onto the yard in stops, the yard being simply raised with the sail in sailing position.

However, the yard and the sail are by no means raised as easily as one might gather from reading the preceding. As was pointed out above, the yard and sail on a 150-ton dhow may weigh over four thousand pounds and are hoisted by sheer manpower, using only a two-part, twofold purchase. Raising the yard and sail is a great occasion on any dhow, large or small—not by way of celebration, but because it represents so much work. There is a great ritual in hoisting the yard, the ritual becoming more important the larger the dhow. With the order to raise the yard, the sailors start a native song and dance; the pace quickens, and at an appointed place in the singing the sailors fall to the halliards. The halliards are at- 533 535 502

533 tacked almost savagely as the men chant praises to Allah and stamp the
535 deck as they shuffle by for another chance at the halliard. When the yard,
502 with the sail gathered in stops, is halfway up, the sailors may stop working
and go into a dance, snapping their fingers and stamping the deck. On a large ocean-going dhow of 150 tons, it takes a whole hour to masthead the yard—about one-third of which is spent in dancing and singing. On a smaller dhow there is much less organization in raising the sail, but it is usually done faster with less song and dance.

502 Once the sail is raised and the dhow is under way, the sailors' duties are usually completed for a considerable length of time. However, if the weather changes, the sail may have to be changed. Once under way it may take several hours on a large dhow to lower one sail and replace it with a smaller (or larger) sail. The course may also have to be changed at times, regardless of weather changes. The Arab dhow tacks by wearing while sailing downwind; in wearing all hands have appointed stations, where stays, tacks, and sheets must be shifted.[49]

501 There is one more important duty carried out semiannually on the great ocean-going dhows running to and from Africa and India: that is cleaning the bottom. The bottom is usually cleaned and refinished before the dhow makes its return trip (from Africa or India) and after it has finished its seasonal trip. The dhow is moved into a shelving beach at high tide, and the ship is lightened as much as possible by the removal of any cargo and its yards, which are lowered overboard. The mainmast is lowered in its gear to the aft of the V-shaped trough in which it rests. Sometimes, depending on the dhow, it is necessary to completely unship the mast; at other times it is sufficient simply to lower it so that its resistance to the wind (and thus its toppling effect) is at a minimum. It should be remembered that the mast on a medium-sized ocean-going dhow is a massive teakwood spar weighing around five tons, while on a large dhow it may run well over ten tons.

When the dhow is lightened sufficiently, it is kedged into shallow water to the songs and chants of the crew laboring on the anchor lines. With the falling tide, mangrove pole props are lashed along the gunwales on each side so that as the tide leaves the vessel dry, it is propped up on stilts. With each successive tide change, the stilts must be carefully reset, as the vessel is partially refloated. To allow a large dhow to topple over is a serious matter, as it may have to lie there until a spring tide lifts it.

When the tide has receded sufficiently, the sailors set to work remov-

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[49] For a description of 'wearing' see R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 122-129.

craft furnish the only transportation to many small off-the-track ports.
In addition to this it must be remembered that the dhow (or other native 502
coastal craft) can navigate shallow harbors and creeks, while a steamer could not get closer than several miles. Thus there will always be a place for these short range coasters. However, the future of the deepwater dhow is another question.

The debt system has worked for centuries to the economic advantage 426
of those financing the dhows, and to the economic disadvantage of those 465
working on them. It has been impossible for the sailors to break away, as 505
they can never work for another *nakhoda* when in debt to one. There is only one way to break away, and that is to pay the debt. Becoming a farmer or a fisherman does not help, as they usually operate under the debt system also.

On its face in such a financial set-up the merchant has everything to gain and absolutely nothing to lose. In the case above (where the shares, and thus the sailors' wage, were worth about 150 rupees and the merchant made eighteen per cent on his investment on the dhow), if the dhow had made only one-half of what it had, the merchant would still have received about ten per cent on his investment, but the poor sailors would have received only 75 rupees ($22.50) as a year's wage. Thus the dhow can compete against steam only at a sacrifice of the unfortunate economic slaves sailing the dhow. The dhow sailors do all the stevedoring, maintenance work, and sailing for their lowly share of the dhow's earnings; if the sailors received a decent wage (even if only on Eastern standards), the deepwater dhow could not stay afloat as a cargo vessel. Coastal craft operating short distances do pay higher wages on the average than the deepwatermen.

However, the advent of the large oil companies in the Middle East has provided a means wherein the sailors can escape from the bonds of economic slavery. By making jobs which pay good money (on Eastern standards) dhow sailors are able to free themselves of their debts and become free men. We have seen above that the oil companies in Saudi Arabia and on Bahrein Island have decreased the number of boats the pearl fisheries can send out, as they cannot get divers to work for the wage they can offer. Kuwait has long been able to keep a large deepwater cargo fleet of *bhums* on the waters around the Indian Ocean because Kuwait had a surplus of cheap labor—there was little else to do in Kuwait besides work in marine activities. Now that the Kuwait Oil Company has made jobs available to the local Arabs, the cheap labor market is gone for the Kuwait *nakhodas*. Thus as the standard of living is increased and cheap labor

384 MARINE INDUSTRIES OF EASTERN ARABIA

RICHARD LeBARON BOWEN, JR.

361 226 503 315 THE Persian Gulf coast of Saudi Arabia is desolate in the extreme: in many places one travels along the beach for dozens of miles without seeing a living soul. But there is a sprinkling of old coastal towns, whose inhabitants for the most part gain their livelihood from the sea. Among them are Jubail, long a port of entry for the capital city of Riyadh, 235 miles inland; Dammam, seaport for the Qatif and Safwa oases (a deep-water pier has recently been constructed at Dammam); Al Khobar and Oqair, ports for the great oasis of Hofuf (Hasa). To these have been added of late years Arabian American Oil Company settlements at Ras al Mish'ab (a construction camp and port facilities), Nejma (a refinery and camp), and Ras Tanura (pipeline terminus and cargo wharf).

FISHING

226 262 Foremost among the marine activities of the older coastal towns is fishing. Although there are far fewer species of fish in the Persian Gulf than in the Indian Ocean, they are present in greater numbers, particularly the porgies, than one might expect in so warm a body of salt water, and fish form a welcome addition to the diet in a land where food is pitifully scarce.

226 [857 504] Fishing methods range from a simple hand line to large and complicated fishweirs. On land the hand line is used mainly by small boys, who, like the small fry of any other country, enjoy fishing. Since there is an almost complete lack of jetties and piers, these young fishermen have to stand on the beach and heave their weighted lines as far as they can (Fig. 2). When the fish are running, these youngsters line the shores, and their catch is sometimes sizable. Hand lines are indispensable on every dhow and are thrown out as soon as the boat is in open water.

A more advanced type of fishing uses the throw net—a circular net about 16 feet in diameter made of quarter-inch-mesh netting. The periphery is weighted with small lead weights, then doubled back toward the center and tied at 12-inch intervals to form a continuous pocket some six inches deep. The fisherman walks in knee-deep water at low tide, holding his net —which he has folded and gathered with the perfection of a parachutist—

➤ DR. BOWEN is a chemical engineer now resident in Providence, R. I. His field experience in Arabia includes three years with the Arabian American Oil Company (1945 to 1947) and some months as technical and engineering adviser to the Arabian expedition of the American Foundation for the Study of Man (1950).

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut
Bay side of the Ras Tanura peninsula. All during the fishing season constant
maintenance is necessary (Fig. 13).

Because of its shoal water, Tarut Bay is the only place along the Persian
226 Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly.

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
suits against the Arabian American Oil Company, asserting that the change
691 in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
424 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-
company executives that they instructed their agents to buy the fishweir
435 rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few
Arabs who held the rights to the weirs, but to the Arabs in the Qatif-Ras
Tanura area the sale was an economic blow, for much of the fish supplied to
Hasa Province came from the Ras Tanura traps.

Rock Mining

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[2] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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113 [2] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen,
501 Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shuwes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

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228 501 plement of long heavy oars, so that they can be independent of the wind when necessary. One of these great diving boats moving out to sea is a sight long to be remembered. I once watched one of the largest Dibai ● [504] boats leave for the pearl banks. During the winter these boats are hauled up on the sand within a lagoon that runs through the city. The great boat moved majestically down this lagoon and out to sea. There were fifteen to twenty enormous oars on each side and each oar was manned by two divers. The oarsmen swung down the [461] lagoon with a stateliness that I have never seen surpassed, the men chanting as they worked, *"A billah mal, a billah mal,"* in a rhythm that had all the swing of a regiment off to war or a football team on its way to a game. There was a splendid silk flag flying at the stern, and the great ship went out to sea with every small boy in Dibai wishing he was on board. I felt the thrill of it myself; and the Baluch boy that I had with me as a medical assistant had hard work to keep both his feet on the ground. "Oh *Sahib,*" he said, "it makes me want to go with them."

However, once the pearl banks are reached, the work is hard and dangerous. The long oars are fastened in place so that they stretch out horizontally over the water and to each oar a rope is tied which carries a lead weight 228 or a stone on its end. The diver stands on this weight as he descends, in order to get down quickly. Each diver has an assistant whose duty it is to haul up the weight as soon as the diver reaches the bottom, so that it may be ready for the next descent. There is a second rope which is fastened around the diver's waist. By this his assistant pulls him up when he gives the signal. This assistance is not necessary if the diving is in shallow

their graves, and justly, too, for diving probably hastened their 228
end. The Government demands that account books be given each 656
diver and that they be kept up properly, and sends inspectors to 426
see that they are. Before the season begins at Bahrein the amount of cash advances is agreed upon and proclaimed. The divers have put up a terrific objection to this limitation, for it seemed to them that they were simply getting less money. They could not understand that their debt was being lowered—in fact they did not care, for hadn't they always been in debt?

There is a "diving court" which enforces the arbitrary laws 228
of the industry, such as those dealing with engagement of labor, 698
taxes, spurious pearls, etc. The court also disposes of any case of 686
a *nakhoda* who cannot pay off his debts; the *nakhoda* may lose his boat and divers, but not his personal property.

There has never been any noticeable effort on the part of the 651
ruling sheikhs to better the lot of their subjects: if they were un- 464
employed for long periods in the winter they would be sure to 461
work harder during the pearling season to pay off their winter's 426
debts. As the local sheikhs levy a tax on every boat and get a cut of some sort on the proceeds, the pearlers in a sense work for them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a farmer, fisherman, or herder there would be little incentive to enter the pearling purgatory. Under normal conditions the divers have an eight months' loaf during which time they live off their *nakhoda;* this is to the liking of both the diver and the *nakhoda*.

However, many divers do find other work, as fishermen or 463
mariners. The depression of the thirties hit the Persian Gulf 464
pearl industry with great suddenness. Within a short period tens 505
of thousands of pearlers in the Gulf found themselves without an occupation. The marine stock of Kuwait rose to the situation and gradually shifted to cargo hauling between Kuwait and
Basra, Iran, India, South Arabia, and East Africa. Large ocean- [501]
going double-ended dhows have carried the fame of Kuwait seamanship throughout the Middle East, sailing to Africa on
one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2

Kuwait MI 1

K MA 396 439 building and trading port of the Persian Gulf, though offering little trade itself. Its only real rival in the deep-sea trade was the ancient port of Sur, near Ras al-Hadd, on the Gulf of Oman. Figures for the port of Sur were unobtainable, but there must have been at least 100 deep-sea dhows sailing from there, the majority to Mogadishu, Mombasa, and Zanzibar. Several ports on the Trucial Coast of Oman also sent their quota of deep-sea ships to Africa and India; and Muscat and Mutrah Bay, and the ports of Lingeh and Qishm, in Iran, contributed a few. But the flag of Iran was a rarity in both Indian and African ports, compared with the Arab.

K MA 396 439 464 In addition to the Persian Gulf and Omani ports, Mukalla in the Hadhramaut, Ma'alla by Aden, Hodeida, Mocha, and Luhaiya in the Yemen, and Qizan on the coast of Asir in the Red Sea, all build and maintain considerable fleets of dhows. These I have seen, personally; there are many ports I was unable to visit. It is probable that the dhow trade round the Arab coasts employs upwards of 2,000 vessels of one sort or another, in which at least thirty or forty thousand men gain some sort of livelihood.

K M.A. 439 505 For many years, steamers of the British India Company have been trading in the Persian Gulf. Kuwait is still well served by steamers from Karachi, and an occasional long-voyage vessel used to put in from New York and London, even before the oil resources began to be exploited in 1940. American, German, Italian, and British lines, none of them likely to overlook any cargoes, all traded to the Gulf. The African East Coast and the Indian coasts are even better served. How is it, then, that a dhow trade of such importance still survives? How is it organized, and how managed?

K MA 488 439 505 One reason — perhaps the chief — why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new-season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and

Kuwait MI1

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his vessel pays practically no port dues. His dates can therefore 458
be warehoused in the dhow, until the market can easily absorb 439
them. 505

The dhow trade is "native" trade, a stubborn plant which has MA
been growing a long, long time. Nearly all the cargoes carried in 439
dhows are for the native bazaars, and almost never for European 443
account. Much of the cargoes consists of goods which the dhow captain himself, or some merchant or merchants travelling with him, sells for his own profit. The dhow is a peddler, as well as a carrier; a storehouse, as well as a ship; a means of livelihood to travelling merchants, as well as to her crew proper. Basra dates, though the most important outward cargo,[1] are only one source of revenue: there are a host of others, not necessarily always legitimate.

Kuwaiti owners of date plantations on the nearby Basra river K
play a considerable part in the financing of deep-sea dhows, MA
though in most cases the captains, called *nakhodas*, are at least [245]
the nominal owners. It suits the merchants well that the *nakhodas* 456
should regard themselves as the owners, for this provides them 471
with a cheap form of insurance. If the dhow be lost it is the 784
nakhoda's loss, and not the merchant's, for the poor captain must 466
pay back not only the value of the dhow but the advance of freight given him to finance his voyage. Since Islam forbids all forms of ordinary insurance, this arrangement is to the merchant's liking. The *nakhodas* must accept it, for in most cases there is no other way by which they can acquire a big dhow.

In Kuwait, immediately prior to the outbreak of World War II, there was beginning to be some restiveness about this, and an association of the *nakhodas* had the temerity to issue its demands upon the merchants. These included payment of demurrage when unduly delayed at the loading berths in Basra (a dhow might be kept for weeks waiting for her cargo), a sliding scale of freights for different ports instead of the customary flat rate of 1.5 or 2 rupees a package regardless of destination, liability for the return of advances to cease with the loss of the ship, two competent officers for every seagoing dhow, and so forth. The demands represente

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[1] Crew requirements and the very measurements of the dhows themselves are reckoned in terms MA
of dates. A sailor to each 100 packages is the general rule, in Kuwait, and a dhow is spoken of 804
there as having a capacity for 2,000 packages of dates, rather than as being of 100 tons burden. 505

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456 a bare minimun, surely, and no more than a nakhoda's right, but
471 the merchants' answer was that if the nakhodas could make new
784 rules, so also could they; and they had the real power. I do not
466 think the attempt of the nakhodas got them very far.

MA While the dates are generally carried both to India and East
443 Africa on a freight basis, nearly all other cargo is bought to the
•505 ship's own account and peddled to best advantage. The mer-
439 chants have a substantial share in the dhow's earnings, apart from the sailor's own ventures, which are limited to what they can stow in a sea chest on the poop. As far as I was able to discover -- and I was more than twelve months sailing in deep-sea dhows -- the freight from the dates, on the typical African voyage, is used to finance a cargo of salt from Aden and to purchase odds and ends which might earn a profit in the bazaars of the Benadir coast and
MA Kenya Colony. At the same time, the dhow carries all the passen-
[184] gers she can prevail upon to make a voyage, anywhere, for the Arab of Oman, and the Hadhramaut in particular, is an inveterate wanderer, and every dhow is a passenger vessel by the mere possession of deck enough to lie upon.

The salt is sold in the best market that offers between the Hadhramaut coast and Zanzibar. At the same time, the nakhoda does what trading he can in anything which he knows, from past experience, will command a market. The average dhow never leaves the Gulf without at least some carpets, allegedly Persian but generally of either Italian or English origin, which are used both as trade and as bribes. Cooking stones, ghee, live sheep, cows, sacks of rice and flour, dried fish, haberdashery of all sorts, brassware, cheap enamelware, Arab confectionery -- all these may be aboard, either as ship's ventures or as the crew's, generally the latter.

Every man of the crew concentrates on goods which can be bought cheaply in the free port of Aden, adulterated if possible in transit, and sold to the Somali or Swahili shopkeepers whose little stores abound in every port along the coast of East Africa, from Haifun in the north (which the Italians called Dante) to Mikindani in the south, which is about as far south as the Arabs sail in these days. Only Indian dhows go further, to Madagascar and the Comorin Islands. Gaily coloured turbans of the correct style

443 505 439 (for the manner of headdress worn in the different parts of Arabia and East Africa varies considerably; what will sell well at Mukalla, for instance, will find no buyers at Kuwait; and the Arab is a stickler for style), sarongs from Java and Japan, amber and artificial beads of the kind the true Moslem loves to fondle, cigarettes in gay packages but of no advertised brand, cheap perfumes (which I have several times seen the sailors laboriously adulterating with water from the ship's tanks), small crocheted caps to go under turbans, money belts, caps of artificial leather and pullovers of extremely artificial wool, veils for the harem, basketware from the Hadhramaut, sometimes a little hashish or *qat*[1] — these are the sailors' ventures, and the profits are their own.

The sailors are inveterate smugglers; almost none of the goods they bring — apart from the main cargo — is declared. Since they leave from small ports along the coast of Arabia where official supervision, while thorough, is not organized to conform with the Europeans' idea of how trade should be conducted, and since so much of their more highly dutiable goods are private ventures, such manifests as they produce to the authorities are useless. The mariner buys his goods himself, and sells them himself (though he does not mind disposing of them to boats alongside). He sees no point in accepting any official interference, and to him the European on the East African coast is still an interloper, recently arrived and wholly unnecessary.

508 484 486 The passenger trade is an important one, particularly in the East African voyaging. Though the Italians in their colonies tried to regulate the movement of Arabs, and the growth of Indian influence in Mombasa and Zanzibar has much lessened Arab trade and opportunities, still thousands of Omani and Hadhramaut Arabs travel down the Benadir coast and to Zanzibar annually. Every dhow fit to go to sea — and quite a few which look as if they are not — carries her quota, and some of the overcrowding is incredible. Among 35 Arab dhows which were lying together at Mogadishu, in Italian Somaliland, in the season of 1939, the Italian immigration authorities checked 4,000 passengers. They

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[1] A bush common to southern Arabia, especially the Yemen. The leaves, when chewed, are somewhat intoxicating.

missed at least another 600, for no list which the dhows supply is MA 505 484 486 really reliable, and each ship carries many persons who are without European documents. As a new dhow arrives, sometimes dozens of her passengers will drop quietly over the side and disperse themselves among the dhows already in the harbour. As with MA [181] the disposal of the seamen's ventures, all Arabs take a delight, regardless of their ports of origin, in the general defeat of European regulations.

II

K MA 505 441 MA [181]

At first glance, the whole deep-sea trade in dhows seems unorganized and almost unregulated. In point of fact, it is very well organized indeed, and has a tradition going back, probably, some thousands of years. There is no association of dhow owners in Arabia as there is a Country Craft Organization on the west coast of India, for the Arab of today is too inherently disunited and fiercely individualist to make this type of co-operation possible. But he can organize his own trade very well, nevertheless. The K MA 472 typical wealthy business family of Kuwait maintains offices, almost always managed by sons of the house who frequently rotate on the circuit, in all the more important centers of Arab coastal trade. The head office is at Kuwait or perhaps Basra, with branches at Aden (in the Crater, not at Steamer Point), Bombay, possibly one other west coast of India port, and Mukalla. Where there is not an actual branch of the family conducting business on a permanent footing, there is either a trusted agent (probably a relative), or one of the younger sons sent in the trading season to watch the family interests. This, for instance, is done at Berbera, in British Somaliland, which, when times are good, can absorb a surprising quantity of Iraqi dates carried there in dhows. The K MA 453 426 agent or family member is primarily responsible for the collection of debts — always a problem in a trade which is carried on without banking. A family carrying on business on such a scale will have a finger in perhaps a score big dhows, all nominally "owned" K [643] by their own *nakhodas*. The cash resources of some of these families must be enormous, and behind them stands the Sheikh of Kuwait, who was a wealthy man even before oil was discovered in his territory.

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When a deep-sea dhow is built, at least some of the money is put up by the *nakhoda* himself and his family. It is the first essential of the *nakhoda* that he should be from a family of standing in the community, which will pay its debts. Just why such families cannot finance a dhow by themselves I was unable to discover, but the Arab, apparently, has no objection to carrying on business under a cumbersome structure of debt. The merchant, backed by the Sheikh or the ruling family, backs the *nakhoda's* family, who support in turn a trusted and experienced member to take command of the dhow.

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It is customary for the boys in such families to go to sea while very young, but they never work as sailors. They are always privileged: no sailor can become a deep-sea *nakhoda*, since obviously if his family is of standing, he would never serve before the mast. The children sail with him sometimes from the age of six or seven, though not regularly. They will make one or two long voyages, looking on and learning but not actually doing anything; then they will remain at home a year or two before going out again. They take command very young. Schooling, at least in 1939, was normally restricted to the local Koranic schools, and rarely occupied more than three months in the year. Only merchants' sons went to the colleges of Iraq, Egypt, and Syria.

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Gradually the head of a *nakhoda's* family may attain the status of a lesser merchant himself, though his merchandise is generally limited to the wherewithal to build ships, which comes up in his own dhows from the Malabar coast. But a *nakhoda* himself almost never becomes a merchant, and a merchant's son never becomes a *nakhoda*. Nevertheless, the profession of conducting deep-sea dhows about the waters of the Indian Ocean is a highly respected one, and the shipmasters of Kuwait are, on the whole, a very competent and knowledgeable class, though few of them can practice much astronomical navigation. Even their long voyages down to Zanzibar or to Calicut are coasting, really down with one monsoon, and back with the other, almost always in sight of land. Their real ability consists in their local knowledge, both of ports and trade.

MA [487]

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In Kuwait, in 1939 — as now — there were upwards of 10,000 qualified deep-sea sailors. An astonishingly high proportion is of

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Negro origin, the descendants of slaves, though not now slaves themselves. Many others are of Iranian origin. Almost none are Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

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As the *nakhoda* class is tied to the merchant by a structure of debt, so also are the sailors tied to the *nakhoda* class in the same way. All deep-sea sailing is paid for on a shares system, and there are no wages. Often the *nakhoda* of the deep-sea dhow has an interest in a pearling vessel (though not now to anything like the same extent as in former years), and the sailor may be bound to him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

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The sailors go to sea because they know no other life, and they make a wretched living by incredibly difficult methods. They have no possessions other than the clothes they stand in, and one or two spare gowns, a good headcloth, and a few sarongs. Their toothbrush is the twig of a tree; their ablutions are made five times daily at a mosque well, or in the sea; they know no shelter and rarely have a bed. The younger seamen, I have noticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere.

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What keeps the seaman a disciplined and more or less contented worker is his hope of reward, principally from smuggling or his own ventures, and his ambition to get hold of a tiny shop in the *suq* of his home town. This is an ambition he rarely achieves. His more usual fate is to die young, especially if he be also a pearl diver.

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also a pearl diver. Pearling from Kuwait and Bahrein is carried on during the season of the hard southwest monsoon in the Indian Ocean, when the big dhows are laid up and there is no ocean sailing. It is therefore possible for the same men to carry on both callings, though in these days the seaman is becoming a little too enlightened to go off cheerfully to the purgatory of pearling.

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The seaman is also helped by his religion, by his interest in the seafaring life (which has a great appeal of its own) and the fine camaraderie about it, and in many cases by the delights of night life in such ports as Zanzibar and Bombay. If he has no harem of his own back in Kuwait, he is certainly no celibate at Zanzibar. He generally seems to manage a small home in Kuwait after a few voyages, depending upon his own business acumen and the general success of the dhow he serves in. Many *nakhodas* appear to maintain several.

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In addition to the merchants, *nakhodas*, and seamen, there is another class of importance in the dhow trade. These are the mates, the experienced officers who, never able to become *nakhodas* themselves because of an unacceptable financial status, very often have more to do with the actual sailing of the dhow than the *nakhoda*. Each big dhow carries at least one such experienced man. Sometimes he is of Iranian origin, and has been sailing since he could walk. Sometimes he is a Negro, member of a trusted ex-slave family, who lives with the *nakhoda* at home or has been brought up in his courtyard.

MA 505 565 439

He is always an able mariner, but he is not often trusted to trade. It is not at all uncommon for a *nakhoda*, on the usual East African voyage — which always begins with a long haul and long-winded peddling of dates round the coasts of Southern Arabia, and to Berbera and perhaps Djibouti — to leave the ship for considerable portions of the passage at sea, while he looks after her business interests ashore. For example, in one Kuwait dhow in which I had the good fortune to sail for some eight months, the *nakhoda* cheerfully left the ship at Aden and went on to Mukalla by steamer, to steal a march on the other shipmasters and scoop the cream — he hoped — from the passenger market. Again, he left the ship at Zanzibar, and his mate took her down to the delta of the Rufiji, hauled her out on the beach at Kwale Island south

of Dar es Salaam, loaded her with mangrove poles, and brought 505
her back to Zanzibar again, where the *nakhoda* had ostensibly 565
been trying to assemble passengers and extra cargo for the return 439
to Arabia but in fact had been enjoying a new harem.

Mates are paid by shares, and are, in my opinion, an oppressed 505
class. They carry their own ventures, engage in smuggling on a 565
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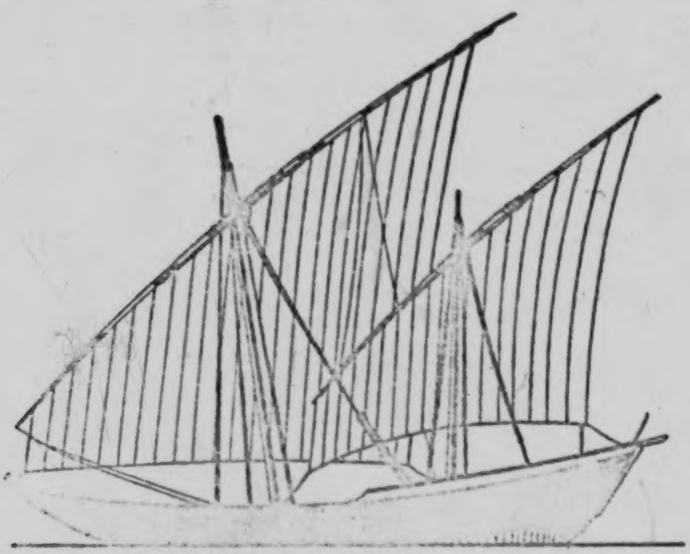

Baggala

[501]

small scale — haberdashery, currency, and so forth — and generally keep the ship's books. They may become *nakhodas* of small *booms*, running to the Basra river; but it is unusual for a man from the more dignified deep-sea trades to descend to this. There is no social status about the *nakhoda* of a coastwise water dhow.

Ships are built by shipwrights who employ no naval architects. 396
Both builders and riggers' lofts are unknown. The ships are put 501
together entirely by eye and take the traditional form either of [171]
the double-ended *boom*, or the carved and embellished *baggala*,
which obviously has a considerable ancestry from the Portuguese

Kuwait MI1

MA 396 501 galleon. *Baggalas*, being both costly to build and unwieldy in a seaway, are now unfashionable. A *boom* is both cheaper and much easier to build, and carries just as much. Her sharp stern makes her safer in a seaway, though it is no part of her builder's plan that her *nakhodas* will try her qualities in a storm. Their sailing, he hopes, will be confined to sunny seas and more or less favorable winds; therefore the clumsy lateen rig will do.

K MA 501 505 The lateen is awkward but cheap; it demands a big crew, but these are cheap, too, for they are the sailmakers and riggers as well as mariners, and their only cost is an agreed share in the ship's earnings. The lateen is a grand pulling sail, and the dhows sail handsomely in their own conditions. There is nothing clumsy about them, though their fish-oiled hulls smell abominably and their underwater bodies are preserved by a mixture of tallow and lime, rubbed on by hand and renewed quarterly. K MA [566] The sailors do this work, as well as handle all the cargoes, keep the passengers in order and extol the merits of their ship so that more passengers might sail with her, tow the ship with her own longboat and propel the smaller dhows by sweeps, in calms, and fight for her if need be. The Kuwait dhows today are never armed, though the Suri may be.

III

K MA 505 501 439 A brief description of my personal experiences will serve to illustrate a typical East African voyage.[1] I sailed in a Kuwait dhow of the *boom* type, a vessel of 2,000 date-packages capacity — perhaps 150 tons — which had a crew of twenty-eight. She carried something between 120 and 180 passengers, although her hold was full of salt and rice, and her decks were already crowded with a large longboat, a small gig, and a dhow under construction for sale at Lamu.

K MA 439 505 I joined the vessel at Ma'alla, the native port of Aden. She had already been several months at sea, peddling a full cargo of dates from Fao (by the mouth of the Basra river) around the coast of the Hadhramaut, and to Berbera. When I joined her, she had been hauled out on the beach at Ma'alla and her bottom

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K MA 113 [1] The voyage here summarized is described in detail in the author's *Sons of Sinbad* (New York, 1940).

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repayed, and already was loaded with her cargo of salt and rice in sacks, and some mysterious parcels on deck for the Sultan of Mukalla. All her crew had their sea chests filled with trade goods from the cheap *suq* in the Crater at Aden; her carpenter was at work on a 40-foot dhow for sale on the voyage; and she had shipped several Suri and Omani merchants, from Aden, bound on a general trading voyage on their own account, wherever the dhow might take them.

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We sailed first to Mukalla and Shihr, where we embarked passengers (the fare was eight rupees regardless of destination, the passengers providing their own food and looking after themselves entirely) and some further cargo. This consisted mainly of a parcel of condemned dates which it was hoped to sell to the Somali (or failing that, to feed to the Swahili labor in the Rufiji Delta, when loading mangrove poles), some dried shark which smelled high even aboard the dhow, some cooking stones, and a considerable quantity of basketware.

With this lot aboard, and the *nakhoda* pessimistic and depressed at the small number of passengers, though his dhow appeared crowded, we sailed first to Haifun, a salt port on the northeastern coast of Italian Somaliland. There we anchored among a fleet of dhows, and did nothing at all for some time. Finally, some rice was sold, some haberdashery smuggled into boats which the local Somali brought alongside, and lot of fish caught and dried. Then we went on to Mogadishu, running down the coast with the northeast monsoon. At Haifun another Kuwait ship was caught smuggling and heavily fined; and all the Kuwaiti in the harbour contributed to pay the fine. At Mogadishu, it was hoped to land a hundred or so passengers, but the Italians would not permit them to disembark. Trade there was extremely difficult, and little could be done. Some of the merchants left, as far as I could gather, to try to collect debts owing to them from previous voyages. Some smuggling went on (I saw a lovely carpet change hands), some of our passengers melted away and their places were taken by others, equally undocumented.

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After a week or ten days we passed on down the coast to Lamu. Here more passengers landed and there was a determined attempt to sell the new dhow which the carpenter had completed. She

K was a lovely little vessel which could carry some fifteen tons. The
MA price asked was 1,000 East African shillings, or about $240. At that price,
501 there was no buyer: she finally changed hands at 700 shillings. Lamu was
439 435 a mangrove-pole port, but I gathered the trade was rather too well regulated for our nakhoda's taste, and we bought nothing.

K Next came Mombasa, a port with a large dhow trade. Some figures I
MA saw in the Report of the General Manager on the Administration of the
439 Railways and Harbours (Kenya and Uganda) showed that the dhow trade
505 was increasing, rather than diminishing. ~~The latest returns~~ I say, for the year ended December 31, 1937, showed that 1,427 dhows had arrived at Mombasa, an increase of ten percent on the previous year. These 1,427 dhows were computed to register -- if they had been registered -- nearly 40,000 tons. Many were Swahili, from Lamu and Zanzibar, but a large proportion was Arab. There was a native harbor set aside for them, and here we sold salt, landing it in our own longboat.
K We got rid of our surviving passengers, gave feasts to merchants and
MA officials of the native harbor (these were a great feature of the voyage,
[579] and were always accompanied by much monotonous singing and dancing), gathered tidings from brother nakhodas from Kuwait and Sur about trade prospects further south, collected debts, and finally departed toward Zanzibar.

K There were three Indian and one Iranian deep-sea dhows in the port at
MA Mombasa. The Iranian was an enormous vessel of over 400 tons -- the
501 largest dhow I saw anywhere. She was a boom and had been built at
396 Kuwait, but the Kuwaiti sold her because they found such large vessels
439 uneconomic, in bad times, for the mere reason of their two great capacity. They brought too much to sell, when the market was depressed, and they could not wait indenfinitely to dispose of their cargoes because their overhead was too high, despite the fact that everything possible was done to keep down building costs, even to the sending of Kuwaiti shipwrights to the Malabar coast to build big vessels there, rather than carry the timber to Kuwait.

K Zanzibar, at that season of the year, was an even busier Arab
MA port than Mombasa. In the first month of the northeast season,
439 over a hundred ocean-going dhows had arrived at Zanzibar, most

K MA 439 of them Arab. I noticed in the registry office of the Customs building that some were entered as Somali, and a few were registered in the Hadhramaut. No longer did they bring down picturesque cargoes of myrrh and frankincense (if they ever did) or ship out slaves and ivory, ambergris and hippopotamus teeth. They brought salt and dried fish; and when they came, the quantities of hashish and other drugs in the town showed a significant increase. They loaded little at Zanzibar for the homeward voyage, but went on down to the coast of Tanganyika.

We completed the discharge of our outward goods at Zanzibar, and the crew busied itself for weeks selling Hadhramaut basketware and Aden haberdashery — port of origin, Yokohama. When we sailed, leaving our *nakhoda* behind, our only cargo was the parcel of condemned dates, which the Somali would not have. MA [164] We passed on down to the delta of the Rufiji River, a place given up to mosquitoes, malignant malaria fever, monkeys, sad Swahili, rain, and the best mangrove poles in the world. Here we lay six weeks, while a cargo of some 142 score of poles was laboriously cut and loaded. For this work, Swahili were engaged to help our crew, and at last the bad dates found consumers. The mangrove poles were ferried out in the dhow's longboat, and paid for in silver shillings to a white supervisor. There were some twenty dhows loading in the Rufiji delta at the time, all for the Persian Gulf.

It struck me as strange that the dhow should spend so much time embarking a cargo in which the total investment was less than $500, for no matter how I tried to figure things out, I did not see how it could possibly be worth her while to haul such a paltry cargo so long a distance, or how she could make enough from it to show a reasonable profit on the voyage. There was certainly something mysterious about this mangrove pole business, and the white supervisor, energetic as he was, by no means knew all that went on. I noticed later, when we sold our cargo to King Ibn Saud's agents at Bahrein for use in a new palace at Riyadh, that the Arab receipt was for 295 score, and the price paid, over 4,000 rupees, approximated $1,200.

MA 505 567 Z 656 There was some attempt in Zanzibar to regulate the dhow traffic, and precautions were taken to see that there was no slaving, under any guise. A local act requires that evidence be shown that any new crew members in Arab ships joined voluntarily; MA vessels must not be overmanned, and crew and passenger lists 505 must be provided and in order; ships must be surveyed, and kept 567 seaworthy; and *nakhodas* must be certificated. As for the last, the Z port officials conduct examinations, and the general principle 656 seems to be that if a man is capable enough to bring a dhow down to Zanzibar, certificate or no certificate, he can also be trusted to sail her away again. But the fee for examination is fifteen shillings, and the Arabs complain about it.

We touched at Zanzibar again after loading in the Rufiji, re- K embarked our *nakhoda* and took aboard a few Swahili school- MA teachers as passengers (they proposed to hire an automobile at 459 Kuwait to take them to Mecca), filled the decks with coconuts 505 and cases of soap and vermicelli, and departed toward the Persian Gulf again with the first of the broken weather at the end of the northeast season. We did not await the coming of the true southwest monsoons, for it sets in hard; we sailed direct to Muscat, in twenty-six days.

Muscat was depressed and there was no trade there, not even smuggling. All that changed hands, as far as I could see, was a box of Maria Theresa thalers, enormous Austrian coins minted in London for the Omani and available in Zanzibar at a price less than the exchange rate in Muscat. The Arabs turned everything to profit and were prepared to sell anything, even the ship. The K sailors' pastime in the Rufiji was buying lemons — a thousand MA for a shilling — and converting them into sherbet, which they 559 hawked in the *suq* at Kuwait throughout the summer.

Our cargo of mangrove poles sold at Bahrein, the ship returned to Kuwait, to lay up inside a coral breakwater until the new season's Iraqi dates ripened and it was time to go out again. At K Kuwait, when all her people were returned — several relations of MA the *nakhoda* had dispersed from Zanzibar back to Lamu and 451 Mogadishu to collect debts — a general balance sheet of the 465 whole round voyage was struck, the profits computed carefully, 459 and divided by a system of shares arranged traditionally. It was 505 not a straightforward statement of income and expenditure; I never saw or heard of any piece of Arab seafaring business which was as simple as that. It was all complicated by prior advances,

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debts, odd earnings not shared and even odder earnings which were shared, and mysterious complicated procedures, some of which I never did fathom, for the war came, and stopped my investigations.

The son of the merchant family which owned our dhow, however, told me that her gross profit on the nine-month round voyage was 11,000 rupees, not including the proceeds of the crews' and officers' private ventures. But I think he exaggerated, for the total investment in the dhow was little more than that. But at any rate, the dhow's people were well satisfied and they all, save one, went back to sea with her. The *nakhoda* grew fat throughout the summer, and took a new wife, and a new *boom* for his brother at a cost of 10,500 rupees; and I heard no complaints from the merchants.

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As far as I was able to discover, half the gross earnings went to the ship; this was the merchant's share. The cost of the food for the round voyage (which was not much, for all hands lived very simply and fishing lines were the most important equipment in what passed for her storeroom) was deducted from the other half, and the remainder was then divided by shares arranged strictly in accordance with the accepted value of each man's rating aboard. The sailor's share on the voyage which I made was reported to be 135 rupees (about $40), whereof 35 rupees had been advanced. This was little enough for such a long voyage, and though they worked hard at all sorts of things and were ready for any kind of business, I doubt whether a sailor's earnings from other sources amounted to more than 20 or 30 rupees, clear.

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I heard of dhows from Kuwait that season which were distributing less than 100 rupees; according to the Kuwaiti, who had no high opinion of them, the Suri rarely paid out more than fifty. To a sailor whose only home was the sand of the *suq* and his bed the cloak around him, whose wants were few and whose paradise was assured, even 50 rupees may be a vast sum of money. There was, at any rate, contentment throughout the Arab shipping industry as I knew it, and the quiet philosophy I learned among the simple seamen was of great help to me in the days of the long-drawn war which was soon to follow.

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505 However, a century before this, Kuwait was apparently noted more for its pearl fisheries (which are still important) than for its maritime trade, as Niebuhr related that in 1763

> Kuwait is a sea-port town. . . . The inhabitants live by the fishery of pearls and of fishes. They are said to employ in this species of naval industry more than 800 boats. In the favorable season of the year, this town is left almost desolate, everybody going out either to the fishing, or upon some trading adventure.[6]

In Niebuhr's time, in the eighteenth century, the Omani sailors from Muscat and Sur on the Gulf of Oman were the famed Arab mariners, for Niebuhr related that

> The inhabitants of Oman, although not fond of sea-fights, are nevertheless the best mariners in all Arabia. They have several good harbours, and employ many small vessels in the navigation between Jidda and Basra. To this last town there come annually fifty such vessels.[7]

In the middle of the last century Muscat was still an important maritime port, for in 1854 Osgood related that

> Several ports in the Persian Gulf are tributary to it, and some excellent ships and a large number of [*baghlas*] employed in coasting and foreign trade, are owned by the Banian merchants at Muscat. In fact more than half of the trade of the Persian Gulf is carried on in ships owned at Muscat. . . . The trade with America, which is carried on chiefly by vessels from Salem does not exceed thirty-five or forty thousand dollars annually. Dates and cash are usually taken in exchange for American merchandize.[8] [439]

In the present day Muscat has completely fallen from its former prized position and given way to Kuwait and Bahrein Island in the Persian Gulf. However, the port of Sur in Oman still carries on the maritime tradition of the Omanis and maintains a considerable fleet of dhows which have long been prominent in the trading along the African coast.

501 The craft that make the trip down the African coast from Arabia are by no means all large ocean-going vessels; craft of all sizes and descriptions come into Zanzibar. Villiers[9] tells of seeing a 30-foot *jalbhut* from Oman sailing down the African coast. Having owned and sailed a *jalbhut* of about the same size in the relatively calm Persian Gulf waters, I have nothing but the utmost respect for anyone with the nerve to sail such a small open boat several thousand miles in the potentially rougher Indian Ocean.

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[6] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 127.

[7] Ibid., 122.

[8] Osgood, *Notes of Travel* (Salem, 1854), p. 81.

[9] A. Villiers, *SS*, p. 190.

505 Estimate of the size of the dhow fleet sailing down the African coast is difficult, as the Arab goes to extremes to evade official statistics. The Mombasa port statistics for 1937 showed 1,427 dhows entering the port.[10] Not all the ships sailing to Zanzibar put into Mombasa, which is only a day's sail from Zanzibar. It must also be remembered that a certain percentage of the figure represents Mombasa dhows and dhows of neighboring ports on local coastal trading ventures. In Aden some two thousand dhows trade in and out of the port every year. However, a large proportion of this figure represents Adenese dhows and neighboring dhows that do most of the cargo carrying to the small ports in the southern Red Sea and the Gulf of Aden; only a small percentage of this figure represents dhows passing through Aden on their way to Africa. Thus it would seem that the total number of craft sailing down the East African coast may well range over a thousand, depending upon economic conditions. Only a small portion of these are Indian craft, for Vaidya[11] estimates that about seventy-five Indian vessels of from one hundred to two hundred tons are engaged in the traffic to Africa, mostly from the Gulf of Cutch.

505 132 The Indian Ocean dhow trade is definitely a seasonal venture, as the ships usually depend on the monsoons to carry them on fair winds to their destinations. Vessels from the Persian Gulf and from India make one round trip a season when traveling south to East Africa. Arab and Persian ships start leaving the Persian Gulf in August and September with the first date crops and return in May and June, averaging eight to ten months for the round trip. Indian ships making the Africa run leave in November and return by June, averaging about six months for the round trip. The Indians have less time in which to make the trip because of the violent storms on the west coast of India during the southwest monsoon, which makes sailing unwise during the months of June, July, August, and September.

When making the trip between the Persian Gulf and India it is customary for the Arabs, Persians, and Indians to make two round trips a season. The vessels leave at the same time as the ships going to Africa; that is, in August and September for Persian Gulf ships, and in November for Indian ships. Because of the monsoon storms, the Indians have to be home by June, while the Arabs only have to be out of Indian waters by June. Actually, Arab ships start arriving in November and are ready to leave India after their second trip in March or April. These trips be-

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[10] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 415.

[11] K. B. Vaidya, *Sailing Vessel Traffic on the West Coast of India* (Bombay: Popular Book Depot, 1945), p. 57. I am indebted to Mr. Alexander Crosby Brown for calling this most valuable work to my attention.

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tween the Gulf and India usually average about three months a round trip.

The effect of the southwest monsoon in India is felt most in the southern part of India. In April the northeast winds change gradually to the southwest; the monsoon breaks in force on Ceylon in the third week in May and moves up the coast, hitting Bombay about the first week in June, and finally reaching Karachi about the last of June.

Along the Malabar coast it is not unusual for 150 inches of rain to fall in four months from May into September. However, farther north on the Sind coast there is only about twenty-five inches of rain during the whole southwest monsoon. Thus on the Malabar coast there is no coastal trade carried on from May through September. During a storm in May 1943 over two hundred vessels were sunk on the Malabar coast and more wrecked.[12] However, on the northern Sind coast of India native shipping is closed down only during June and July, so that there is a ten-month shipping season possible there, as compared to seven months on the Malabar coast. The west coast of India gets about a month more of the southwest monsoon than the western part of the Indian Ocean, where the northeast winds start about October. The northeast monsoon usually brings fair weather with little rain to the west coast of India. Away from the coast of India the southwest monsoon is a fair weather trade wind blowing up from Africa.

There are numerous Indian firms that will insure cargoes carried on Indian coastal sailing craft; the insurance rates give a vivid picture of the relative danger at sea during the various periods of the two monsoons:[13]

Season	*Month*	*Rate*
Change	November	1½%
Northeast Monsoon	December-January	1%
	February	1¼%
	March	1½-1¾%
Change	April	2½-6%
Southwest Monsoon	May	6-20%
	June-July-August	No insurance
	September	2½%
	October	1½%

This shows very graphically why Arab ships stay out of southern Indian

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[12] Ibid., p. 16.

[13] Ibid., p. 136. These rates are average rates for the southern part of the coast, and of course would change for the northern part of the coast where the southwest monsoon does not set in until June.

waters from May to September, and why most local Indian craft are 505
drawn up on the beaches. 132

II

Dates are probably as important a factor as the monsoons in maintain- 439
ing the large lateen fleet in the waters of the Indian Ocean. By a lucky co- 505
incidence, the great date crop of Iraq begins to ripen just before the northeast monsoon sets in about October. The great maritime expansion of the port of Kuwait has probably been due in no small part to its proximity to Basra, the port through which most of Iraq's dates go.

Dhows come to Basra for dates from Kuwait, Bahrein, Persia, Oman, India, and even as far away as the Hadhramaut. Starting in the latter part of August and continuing into September, Kuwait deepwater ships are floated from the beaches, where they have rested for several months during the summer, making ready for the run to Basra to pick up dates. The farther the home port is from Basra, the earlier the ships must depart, so that craft from the Hadhramaut must allow a month or more to get to Basra, riding up to the Gulf of Oman on the summer monsoon and then working their way up the Persian Gulf, where the monsoon is not felt.

Almost without exception the date cargo is carried out of Basra on consignment for some merchant; sometimes the destination is known on leaving Basra, but often the consignment is sent to Aden or Mukalla (see Plate 23—bottom) in South Arabia for final shipping instructions from the Arab or Indian export firm shipping the dates. Dates are usually not carried into the Red Sea much past Hodeida in the Yemen in Kuwait ships, although Villiers[14] tells of a Kuwait *bhum* transporting a load of dates as far as Qizan in Saudi Arabia.

In such a manner dates have been leaving Iraq for decades bound for the southern shores—that is until the winter of 1949. In that winter, for the first time in many years, the great date-bearing Kuwait *bhum* fleet failed to appear in its usual strength in the waters along the southern shores of Arabia; only a portion of the usual quota appeared in Aden by the first of 1950. The dates that would ordinarily have come into Aden in Kuwait dhows came down unceremoniously under steam. What caused this abrupt change in the well-established status quo of the dhow trade? The same thing that has wrought so many other radical changes in the economy of the Middle East lately—oil!

Kuwait is actually a city-state with few industries except pearling, fish- 361
ing, and shipbuilding; there are no farms, no date plantations, and only 465

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[14] A. Villiers, *SS*, p. 366.

361 465 a few scattered Bedouin tribes. The Kuwait Oil Company is now operating in high gear, and has apparently offered so many opportunities for natives that *nakhodas* (captains) have difficulty in getting men to sail their ships at the wages they can offer. Sailors never get any regular wages on a dhow, receiving a share of the earnings of the ship only after the voyage is over. Many sailors have apparently found that it is a comfortable feeling to receive a regular wage every week! It is too early yet to tell whether or not the change is permanent.

439 505 There has also been a noticeable fall-off in date-bearing Arab dhows sailing to India, but apparently for a different reason. Vaidya[18] states that during the 1943-1944 season, presumably for the first time, sixty to seventy per cent of the Arab fleet that usually brought dates failed to appear because of Arab restrictions on the export of wet dates and because of the high prevailing prices of the dates. Thus, this case is not allied to the present situation prevailing in Kuwait, as during the 1943-1944 season dates presumably were not shipped to India by any other means.

However, even if Kuwait is unable to put its *bhums* to sea, the date crop in the future will still probably be carried out of the Persian Gulf in dhows as usual; it will take time to attain a balance again. Whether the port of Sur rises to the challenge or whether some Persian port takes the trade remains to be seen. The Suris from Oman are logical successors to Kuwait, for in times past they have been noted for taking cargoes at lower rates than the Kuwaiti or any other mariners could afford to, and they have a long maritime history.

It is interesting to note that oil activities in other areas in the Persian Gulf have drastically affected the marine activities of other coastal towns. Over ten years ago, the Saudi Arabian ports of Jubail, Qatif, and Darin used to send out over a hundred dhows yearly to join the Persian Gulf pearl fisheries. Now if they send out several dozen dhows it is news; the Arabs who used to dive for pearls now have steady jobs with the Arabian American Oil Company. The same has happened on Bahrein Island. The Bahrein *nakhodas* are no longer able to find a multitude of divers who will accept the wage the *nakhodas* are able to offer; thus the Bahrein pearl fleet is only a shadow of what it was a quarter of a century ago.

439 226 Most but not all Arab dhows load dates first; however, many Omani dhows bring cargoes of dried fish and fish oil, for fishing is particularly good in the waters off Oman, and sharks and large tuna are caught in considerable amounts, both for home consumption and export. Sometimes, however, the Omanis may set out for Africa empty, or with only a partial

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[18] K. B. Vaidya, op. cit., p. 207.

439 487 or other dried fish, *ghee* (clarified butter), honey, tobacco, grinding stones, and straw work (fans, mats, and baskets). It must be remembered that most of the cargo moving around the Middle Eastern waters in small vessels, whether dhows or small coastal steamers, is for the native trade and is destined for native bazaars, which are noted for the cheapness and poor quality of their wares. Once the dhow is loaded it is ready for the trip down the East African coast; however, the Arabs sometimes take a month or more to collect a full cargo.

Upon the *nakhoda* of the dhow rests the responsibility of getting another cargo for continuing down the African coast once the consigned date cargo is discharged. Invariably the *nakhoda* is the nominal owner of his dhow, so he acts as his own agent. As the cargo loaded after the dates are discharged is not on consignment, its selection is a matter of the *nakhoda's* judgment, with an eye to what will sell best in the African markets. However, a cargo that must be regarded as essentially on consignment is that of passengers. On some Africa-bound dhows passengers comprise a considerable portion of the cargo. The competition for passengers is very brisk, so that there is sometimes a race among the various *nakhodas,* who hasten to neighboring ports via motor launch as soon as their ships reach South Arabia to discharge their dates.

167 505 Through the dhows there is a constant flow of Arabs from South Arabia and Oman and of Indians from India. The immigrants usually become porters, hawkers, musicians, or beggars, but if they are very industrious, they may end up owning a small shop in the *suq*. Their usual aim in migrating is to work long enough so that they can go home after they save a little money; usually they never make enough to get out. Villiers[16] states that the Italian officials in Mogadiscio checked four thousand passengers on thirty-five dhows that were in the harbor when he was there in 1939. In 1937 the fare along the Hadhramaut coast between ports was three rupees.[17] In 1939 the fare from South Arabia to any African port was only eight rupees for men and twelve for women.[18] In Aden in 1950 the fare for natives traveling as deck passengers on A. Besse and Company dhows with no accommodations was 15 rupees to Berbera, Djibouti, and other ports about 150 miles from Aden; thirty rupees to Massaua, Mukalla, and ports about 450 miles away; and one hundred rupees to Jidda, Port Sudan, or ports approximately one thousand miles from Aden. These were fixed rates on the dhows operated by Besse; other dhows that

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113 [16] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal,* II (1948), 404.

[17] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 313.

[18] A. Villiers, *SS,* p. 78.

were trading down the coast could easily afford to undercut these rates. 167

As was mentioned above, women are usually charged higher rates for travel on dhows; this is because they have to be segregated and usually manage to make trouble, unintentional as it may be. Villiers[19] gives a graphic description of the nuisance a group of women can cause on an Arab dhow. For centuries women have apparently been creating disturbances on Arab dhows, for Niebuhr, who traveled down the Red Sea on a dhow in 1763, relates that

> In our passage, we found ourselves in danger of a worse misfortune than shipwreck. The females, who were lodged under us, more than once suffered linen, which they were drying, to catch fire, in consequence of which the vessel must have been burnt, if we had not been alarmed by their screams. . . . Those women were indeed extremely troublesome and indiscreet.[20]

Besides the ship's cargo, every member of the crew usually lays in a 439 store of goods that he personally peddles. Each sailor is allowed a sea chest 505 (see Plate 22—bottom), which he fills with print goods, turbans, flashlights, razors, sarongs, cigarettes, and perfumes which are later diluted. The *nakhoda* usually has some rugs or carved wooden chests to peddle (see Plate 17—bottom). Virtually none of this material enters Africa legally, but is for the most part smuggled in. Most of these trivial goods are carried in by the Arabs personally. Villiers[21] relates that he saw one man wear three gowns and eight sarongs, then wrap more sarongs around his knees, and make six trips through customs a day. Sometimes they are detected and stripped, but that is part of the risk. Often the Africans come out in canoes at night and remove the goods in small quantities. Frequently Arabs travel down the African coast on dhows as professional smugglers, living only for the smuggling they can accomplish. This sort of trading has been going on for centuries, for Paris[22] related that '. . . leur navires sont de vraies caravanes dans laquelles tous les matelots ont un intérêt.'

For the Arabs and the Persians, the trip down the African coast is leisurely and slow. It is not unusual for a dhow to stay in a port for three or four weeks haggling over a cargo, only to leave without having transacted any business. There is no rush, simply because there would be a long wait for the southwest monsoon to set in and carry them back north, if

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[19] Ibid., p. 78 ff.

[20] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 219.

[21] A. Villiers, *SS*, p. 143.

[22] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra-Européens* (Paris, Bertrand, [1841]), p. 9. '. . . their ships are true caravans in which every sailor has an interest.'

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439 they completed their trip down the African coast to Zanzibar too quickly.

505 Once the trading voyage down the African coast to Zanzibar is completed,
Arab and Persian craft usually load a cargo of mangrove poles for
shipment back to Arabia, unless they have the rare luck of getting cargo
[342 on northern consignment. For centuries mangrove poles from Africa
314] have been used in the construction of houses in Arabia, where there is an
extreme shortage of wood of any kind. Indian dhows never load mangrove
poles since there is an abundance of wood in India. Mangrove trees
are plentiful along the East African coast in swamps at certain river
mouths; most poles come from the Rufiji Delta, a little south of Zanzibar,
and from Lamu, north of Zanzibar. The poles are cut by the dhow crews,
with the aid of Swahili cutters recruited for the purpose.

439 Alan Villiers[23] spent a month in the Rufiji Delta with a Kuwait crew
314 obtaining a cargo of mangrove poles and has given us a most vivid description
of pole-gathering activities. In the Rufiji Delta the mangrove
trees grow in the soft, muddy delta, so that the cutters must wade in mud
and water all day long. The branches are stripped with small axes and
the poles loaded into small dugout canoes and brought to collection
points where they are graded and stamped by government inspectors.
Frequent and sometimes constant rain and savage mosquitos make a
pole-gathering trip in the Rufiji Delta a suffering hell!

The Arabs have to pay the firm holding the pole-concession on the swamp for the poles, but in true Arab fashion they manage to load considerably more poles than they pay for. There is a well-organized pole-stealing racket, with everyone in on it, from the cutters to checkers and inspectors, with the exception of the head government forestry inspector. As the prevailing market price for mangrove poles in Arabia is about the same as the list price in Africa, the Arabs could not make any profit if they did not manage to load some extra poles.

439 In addition to mangrove poles, the Arabs may load cocoanuts, cloves, cocoanut oil, soap, or vermicelli. A private venture of the crew for the return trip from Zanzibar may be in lemons. Around Zanzibar lemons can be bought by the canoe-load for several rupees. The crew can squeeze the lemons and bottle the juice in bottles they have acquired along the way, using a pinch of salt as a preservative. The juice is sold at a nice profit in northern ports, where it is diluted for making sherbet.

In making the trip home on the southwest monsoon the Arabs waste little time, for the sooner they can get back, the more time they have for other activities before it is time to ship out again. Dhows from Oman

forbidding traffic in adult women;[26] in 1948 these same two countries 567 failed to file reports on efforts to suppress traffic in women, children, and obscene publications.[27]

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[23] A. Villiers, SS, pp. 237-261.

Slaving is difficult to stamp out, as the African victims are led to believe that their social status will be bettered. Actually, there is some truth in this, for an African, even as a slave, has a far better life in Arabia, since the Arabs treat their slaves fairly.

British regulations at Zanzibar provide that dhows must carry crew members voluntarily signed on and not in excess of that needed to sail the ship.[28] At Mombasa, *British Regulations for Native Vessels* provides that no man may be signed on as a seaman without satisfying the officials that he has voluntarily shipped, and further that no passengers are to be shipped without the knowledge of the authorities.[29] However, Villiers[30] relates that an Omani *sambuk* intentionally ran down a fishing canoe off Africa and 'saved' two Africans to be sold later as slaves in Arabia.

In essentially the same category as the slave is any other illegal or illicit 439 trade. During World War I gun-running was at a high, but now the trade is not very prosperous. There is considerable cargo smuggled to avoid duties; tea and other goods are run to Persia by the Arabs on the Trucial Coast of Oman—the old Pirate Coast.

The customs and immigration officials in Africa do not have much use 486 for the Arab deepwaterman, with his Arab passengers and smuggling crew. On the other hand, the Arab takes delight in deception, and attempts to confuse the European as much as possible. No large dhow ever [505] carries a visible name; its papers usually contain an official name, but more often the dhow is known by the name of the *nakhoda*, who is usually the nominal owner.

As soon as an Arab dhow reaches an African port, the local officials try to get a passenger and crew list; in this they never succeed, as certain of the passengers always vanish into the native anchorage as soon as the anchor is down, to return after the survey is made. This is easy, as all the native craft are herded into a separated anchorage and often new arrivals have to drive into small spaces in the middle of the anchorage.

Few carry passports or other identification, so actual identification is

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[26] J. L. Carver, 'Slavery's Last Stronghold,' *United Nations World*, II, No. 5 (June, 1948), 24-27. 113

[27] However, in all fairness it should be pointed out that the USSR, Afghanistan, Byelorussia, Honduras, Iceland, and Norway also failed to make reports on the grounds that the problem has not arisen in their countries.

[28] A. Villiers, *SS*, p. 212.

[29] Ibid., p. 190.

[30] Ibid.

721 Parts of this coast are as dangerous for Europeans as for Arabs, and in
619 some instances more so for Europeans. Even as late as December 1949 on the supposedly peaceful coast of the Aden Protectorate an act of violence occurred against a British-owned yacht. I talked to the survivors several months later in Mukalla. They related how the 110-foot motor launch *Anne Loretta* with an Englishman, his wife, and one Arab crewman was cruising a little off shore when she touched a sand bar. The captain went ashore to lay out a stern anchor and was seized by the Arabs of the local Ardiab tribe on the coast; then his wife and the Arab went ashore to see what had happened and were likewise seized. Several British officials to whom I talked admitted that these two English people came very close to death in the hands of these unpacified coastal inhabitants. The British explanation was that the area was between the Eastern and Western Aden Protectorates where the tribes had not been pacified, and the yacht should never have landed there.

IV

● 505 Every Arab dhow of ocean-going tonnage has a captain *(nakhoda)*, a mate, three quartermasters (or helmsmen), a boatswain, and perhaps a boatswain's mate in addition to the crew. The total complement on a 100-ton ship may be from twenty to twenty-five men, while on a 200-ton ship there will be from thirty-five to forty men. The small coasters of up to 50 tons have crews up to eight or ten; there are no officials on these
[291] small craft outside of the *nakhoda*. There is no formal dress on a dhow; often it is difficult to tell the *nakhoda* from the crew, as everyone usually wears simply a loin cloth or the long Arab gown and a head cloth.

A *nakhoda* is much more than the word 'captain' implies; he acts as navigator, pilot, shipwright, sailmaker, ropemaker, agent for buying and selling cargo, agent for freight, agent for recruiting passengers, cashier, bookkeeper, judge, and arbitrator. So completely does the *nakhoda* handle the ship and the ship's affairs that the mate has little to do when the *nakhoda* is aboard. Only when the *nakhoda* leaves the ship does the mate take over; that is the mate's only excuse for existence.

505 Many of the Kuwait ships on the run to Africa carry carpenters aboard
396 —not as ship's carpenters, but for the construction of small dhows for sale in African waters. Presumably they can sell them profitably in Africa at a price cheaper than the local boatbuilders! However, a small 10-ton dhow that was built aboard the Kuwait *bhum* on which Villiers sailed down the African coast, had to be left on the beach at Zanzibar in charge of a ship's agent, because the dhow could not be sold at the price de-

manded.[44] Few dhows carry ship's carpenters; they hire a carpenter when they need one. 505 396

The actual duties of a dhow crew may often begin weeks or months before the voyage starts. If the dhow is new, the first duties of the crew are to rig the ship and make the sails (see Plate 20—top). A boatbuilder furnishes only the hull with masts and yards; fitting out the ship is considered part of the work preliminary to making the voyage, and the sailors do not actually receive money for this preliminary work, as they are paid only when the voyage is over. If they actually need it, the *nakhoda* will give the sailors cash advances; these advances are later deducted from the sailor's share of the vessel's earnings at the end of the voyage. Thus the *nakhoda* fits out his ship at no cost to himself so far as labor goes—the crew actually furnishes it for nothing! Besides this the crew does all the stevedoring on any cargo the dhow may carry, also transporting the cargo in the longboat when required (see Plate 19—bottom). 505

Arab dhows keep no schedule and know little routine. At sea everyone, including the *nakhoda,* usually loses track of time. Friday, the Moslem day of rest, is not observed at sea, so the sailors work the month around and days come to mean nothing; it is easier not even to try to keep track of them. The only track of time the Arabs keep is the occurrence of Ramadhan, the month when the Moslems fast during the daylight hours. The Arabs know whether Ramadhan is before them or whether it has passed; if it is ahead of them, they keep a very rough idea of how far off it is. [505]

When there is no work, the crew sleeps in a shady spot, if one is available—on the cargo or a pad. All hands turn out day and night for any work. It is not uncommon to see a dhow-load of sleeping sailors pass in broad daylight, but they can be on their feet in a second.

Watches are informal and virtually nonexistent on a dhow. Usually the *nakhoda* keeps watch during the day and the mate or a quartermaster or a boatswain keeps watch during the night. It usually turns out that the helmsman keeps watch, as he is the only man who has to keep awake! The carpenter on a Kuwait ship stands no watches and has few other duties outside of his boatbuilding.

There is a general working period of several hours for all hands every day, usually during the morning. The most essential duty is bailing; the foul bilge water is brought up from a small bailing-well in buckets, and is either dumped into a bailing-trough to flow overboard or dumped overboard via a fireman's bucket brigade. The decks are never washed down, as the water would drain below, through the leaky decks, rather than

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[44] A. Villiers, SS, p. 268.

505 overboard, and would have to be bailed out again. Other everyday duties may consist of ropemaking and sail-sewing (see Plate 20—bottom).

502 Before the sailing duties of the crew can be fully visualized, one must understand how a dhow is rigged. The ocean-going variety is invariably two-masted, although some of the smaller ocean-going craft, that should more properly be classed as coasters, have a single mast. Most large ocean-going dhows can raise a third mast far aft as a sort of jigger if they so desire; this mast and sail are usually borrowed from the longboat. These large dhows never carry this third mast as standard rigging; it is erected temporarily only when needed.

Usually when sailing before the wind large dhows carry only their great mainsails; there is little advantage in raising the smaller mizzen when sailing dead downwind with the mainsail up. However, when sailing downwind in a quartering wind, the mizzen is often raised in addition to the large mainsail. Many of the Indian and some Persian *baghlas* can send up a lateen topsail over the mainsail. Like the ornate carved stern of the *baghla*, which was presumably copied from European galleons, these topsails were probably also copied from the Europeans.[47] It is interesting to note that the *bhum*, which has risen to prominence as an ocean sailer in the last century, apparently never carries such a topsail.[48] The trend among the Arabs is to the least number of sails possible; the Arabs do not consider the setting of a topsail or a jiggermast and sail worth the effort, and few Arabs even carry a topsail.

When going to windward in light airs most large ocean-going dhows can set four sails: the lateen mainsail, the lateen mizzen, the lateen jigger, and a jib. The jib is rigged from the end of a light boom extended over the stemhead. With a big jib on, the jigger will help balance the canvas and ease the steering; but the Arabs still usually consider it too much trouble to set the jigger.

Thus, while some of the large ocean-going dhows have five different sails (main, mizzen, jigger, jib, and topsail) which they can set, they often carry only the mainsail. In adhering to their policy of a few big sails, rather than a number of small sails, the Arabs usually carry three different sizes of mainsails and two different sizes of mizzens. They adjust the size of the main to take care of the wind and try not to set any other sails. However, in light airs, they are often forced to set more canvas, but do it grudgingly.

The mainmast and yard on an ocean-going dhow are nothing less than

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[47] R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), Plate 9.

[48] A. Villiers, SS, p. 277.

501 ing the old paying-stuff with scrapers. After this is removed they immediately start to put on the new compound, a mixture of tallow and lime, in thick layers with the flat of their hands. As soon as the task is finished, the dhow is kedged into deeper water, re-rigged, and is ready to sail. If no planks have to be replaced, this operation should not consume more than two or three days. A unique though rather incredible means of cleaning the bottom of an Arab dhow is recorded by Villiers,[30] who relates that, while becalmed off Oman, the sailors on the *bhum* on which he was sailing dived overboard, and scraped the sea growth off the ship's bottom while swimming slowly from side to side! The *bhum* in this instance was drawing thirteen feet of water.

505 All work on a large dhow is done by brute strength, and when the crew is working, the pace is very strenuous. All hands carry out orders day and night with the same fanatic vigor—it almost seems as though their lives depended upon the particular task they were doing at the moment. The *nakhoda* plays no favorites; when the tempo becomes too fast, those too old or feeble will drop out or be given a sea burial in a cover of palm fronds. Thus it is easy to understand why, when there is no work, all hands are to be found asleep. Thus have the dhows sailed for centuries on their unhurried voyages, and so they will probably continue for centuries. Of all the crews—Arab, Persian, and Indian—the Arabs from Kuwait attack their work with the most energy, almost fanatically.

501 535 At times the large deepwater dhows still have a pomp and ceremony about them that give them a dash of color never to be found in coastal dhows. Whenever coming into a large port that can supply the Arab sailor with the diverse entertainment that sailors of all lands expect after a long voyage, there is a great celebration. This consists of the dance so familiar among male Arabs throughout the Arab world—dull shuffling, agitating, jumping and hopping, accompanied by the loud noise of snapping fingers and moaning music from drums and tambourines. Sometimes the sailors get so wrapped-up in their dancing while entering a port that they are late in executing orders. Quite naturally, the longer a dhow has been at sea and the farther it is from its home port, the greater the celebration.

V

501 On even the largest Arab deepwatermen, the crew has no quarters, as there is no 'below'; all hands live on deck, finding the softest place they can. Usually the sailor's clothes—a nightshirt-like gown or a sarong and

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[30] A. Villiers, *SS*, p. 298.

426 clean-cut in Villiers' case, as all the shares of the *nakhoda* and the mate
465 come from the crew's half of the net earnings. On the 240-ton *sambuk El Wafi*, which I boarded in Aden in 1950, the shares were as follows:[39]

	Value of Share	*Number of Shares*	*Total Shares*
Nakhoda (captain)	4	1	4
Serang (mate)	2	1	2
Sukkani (quartermaster or helmsman)	1½	3	4½
Muqaddam (boatswain)	1¼	1	1¼
Katib (clerk)	1½	1	1½
Wakil (steward)	1¼	1	1¼
Bahri or *mallah* (sailors)	1	33	33
Total shares			47½

In India some crews are paid on a salary basis, but many others work on a share basis. However, in India the owner takes one-third of whatever the ship earns. Then the craft's expenses while she was at sea and the supplies for the crew are deducted from the remaining two-thirds; the remainder is then divided among the captain and crew according to shares.[40] By dividing the profits in this manner the Indian owner gets about a quarter less than the Arab, while the Indian crew gets about ten per cent more.

471 The largest importer and exporter in Aden, and probably the whole
426 Gulf of Aden for that matter, is A. Besse and Company, operated by a
465 shrewd Frenchman, Mr. Antone Besse. Among Besse's various holdings in the Middle East are twelve dhows, all registered in Aden. The *El Wafi* was one of the twelve *sambuks* owned by A. Besse, and operated in the Gulf of Aden and the lower Red Sea. On the average these dhows made four trips a month. The *nakhoda* was given advances, which he in turn gave to the crew, before each trip. After four trips the gross return for

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505 [39] It will be noted that the Arabic names in Villiers' list of the members of the crew on a Kuwait
104 *bhum* and in my list of the members of the crew of an Aden *sambuk* are not the same; however,
114 this does not mean that either is necessarily wrong. The Arabic names on my list were checked from three independent sources in Aden, and my informants in Aden recognized Villiers' *muʿallim* as the word the Kuwaiti used for 'mate.' Villiers indicated on his list 'quartermaster' but did not give the Arabic for the word. The Arabic word that I found in use in Aden for this member of the crew was *sukkani*, which comes from *sukkan*, the Arabic for 'rudder.' Thus it would seem that the more proper translation of the word is 'rudder-man' or 'helmsman,' although his position on the dhow is really that of 'quartermaster.' The word *muqaddam* is the word commonly used on land to refer to a 'headman' who is the leader of any other group of working-men. However, on a dhow the *muqaddam* is the man who superintends the letting go and the weighing of the anchor, so the translation of the word when applied to seafaring men is properly 'boatswain.' The important fact evident from the two lists is that there is always a consistency in the top officers of a dhow—there are a captain, a mate, three quartermasters (or helmsmen), and a boatswain, irrespective of the Arabic name by which they are known.

[40] K. B. Vaidya, op. cit., p. 41.

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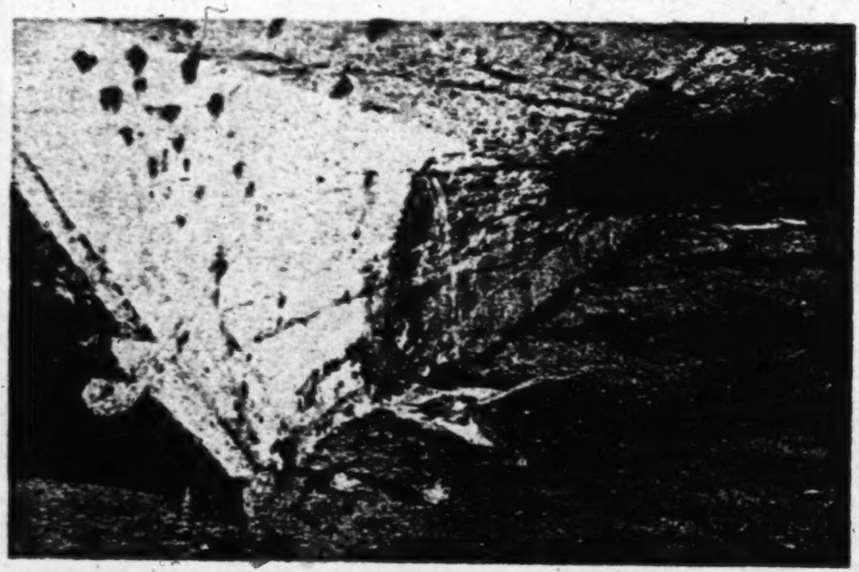
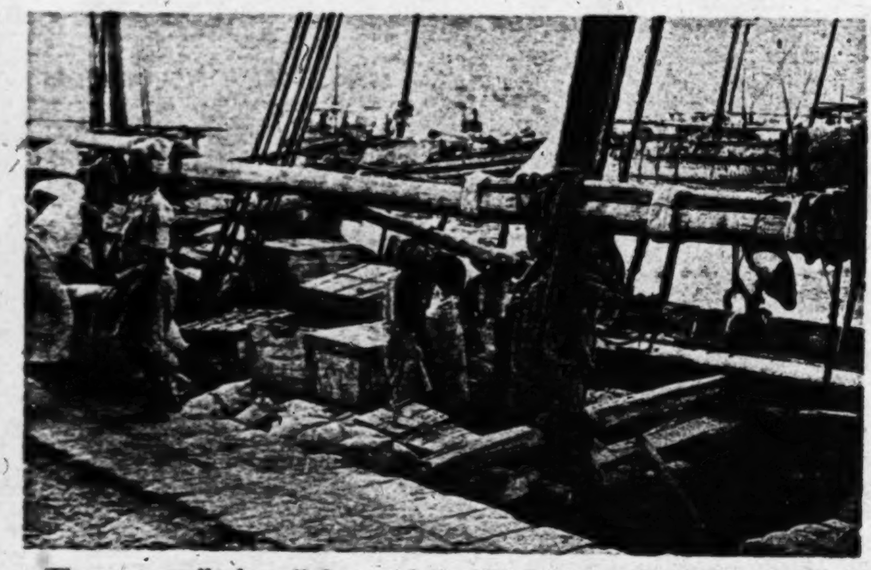


The dhow is usually not a very seaworthy craft. The photograph shows bilge water leaking through weak seams in the bottom of a large dhow drawn up on the beach

505



The crew usually does all the stevedoring. The photograph shows the crew of an Aden dhow loading the undecked craft for a trip to Djibouti. The cargo remains unprotected from the weather

Facing P. 196 (A)

PLATE 20

396

The crew that is to sail a new dhow must rig the ship and make the sails first. The photograph shows a set of sails being made at Aden

● 505
283

Rope making is one of the odd jobs that crew members perform. Here an old sailor makes some rope using his toes as well as his hands

Facing P.196 (B)

the cargo the dhow had hauled was figured and the cost of the food con- 421
sumed by the officers and crew was deducted, giving the net earning of 465
the dhow. One-half belonged to the crew and was divided into forty-seven 471
and one-half shares as shown above. The other half belonged to the owner, and represented his return on his investment; the owner had to maintain the dhows from his half of the earnings. As we saw above in the case of the figures presented by Villiers, the owner has little to deduct from his share of the ship's earnings, so his return on his investment is considerable. It is little wonder that Mr. A. Besse was recently able to give Oxford University a contribution of £2,000,000!

Over one hundred years ago, the French Admiral F. E. Paris spent con- 477
siderable time in the waters around Muscat and wondered how Arab ships could at that time compete with the more efficient European sailing ships. Paris summed up his conclusions as follows:

> . . . les Arabs qui les montent habitués au retour périodique des moussons, n'exécutent, en general, qu'un voyage par an . . . [ils] entendent bien le commerce; malgré cela, ils sont rarement employés par les Europeans . . . et, comme ils ne prennent que de très-faibles cargaisons, ce n'est que grâce à l'extrême économie des Arabs qu'ils peuvent servir pour le commerce.[illegible]

Only a decade ago, one hundred years after Paris, men of other lands were still wondering how an Arab sailing fleet could possibly survive in the present era of oil and steam; to satisfy his curiosity Alan Villiers dedicated a year of his life to sailing with the Arabs in their dhows. Villiers has summed up the reasons for the survival of the dhow fleet as follows:

> One reason—perhaps the chief—why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and his vessel pays practically no port dues.[illegible]

While in Aden in 1950, the writer investigated the intriguing prob- 505
lem of dhow economics, as applied to the coastal craft operating around

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[illegible] F. E. Paris, *Essai sur la Construction Navale des Peuples Extra-Européens* (Paris, Bertrand, 113
[1841]), p. 9. '. . . the Arabs who man them, accustomed to the periodic reversal of the monsoons, carry out, in general only one voyage a year . . . they understand commerce well; in spite of that, they are rarely employed by Europeans . . . and, as they carry only very poor cargoes, it is only because of the extreme economy of the Arabs that they can be of use for commerce.'

[illegible] A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 400-401.

Aden. The twelve dhows mentioned above and owned by Besse have a gross tonnage ranging from 53 to 446, with an average gross tonnage of 181 and an average capacity of 150 tons. Six of the larger dhows have auxiliary diesel engines but the other six have none. Although engines might seem to conflict with the fatalistic attitude of the Arab sailor, the Arabs manage their engines very well. A summary which Mr. A. Besse furnished the author of the gross and cargo tonnage of his twelve dhows, all of the *sambuk* class, follows:[illegible]

Name	*Gross Tonnage*	*Capacity-Tons*
*Dawood**	446	400
*Galood**	330	300
*Wafi**	240	190
*Lateef**	225	200
Nufeed	189	180
Masheet	170	140
*Essid**	136	90
Nuthel	118	95
*Henkhles**	112	70
Kaid	75	70
Karn	73	70
Dharif	53	50
Average	181	150

* Indicates auxiliary diesel engine installed.

A. Besse sends these dhows to Mukalla (see Plate 23—bottom) and Shihr on the Hadhramaut coast; to Hodeida, Luhaiya, and Maidi in Yemen; to Qizan in Saudi Arabia; to Kamaran Island; to Massaua and Assab in Eritrea; to Djibouti in French Somaliland; to Zeila and Berbera in British Somaliland; and to Bender Cassim in Italian Somaliland. The most distant of these ports (Massaua) is about 450 miles away from Aden, while the nearest (Djibouti) is only 150 miles from Aden. The dhows operating in this 450-mile range from Aden average about four trips a month, and carry merchandise destined mainly for branches of the Besse empire, but also carry any other cargo they can obtain.

The Besse dhows have been known to make occasional trips as far away as Port Sudan and Jidda in the Red Sea (about 800 miles from Aden) and

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[illegible] While the two sets of figures are not consistent in relation to each other, they do give an excellent general picture of the relative tonnages. In Besse's office on the Maala waterfront in Aden there was a large blackboard with the dhow names painted down the left-hand side and space to the right for information about their cargoes, port of destination, ETA's, etc. In the middle of the dhow list, a name had been scratched from the list. This represented a 150-ton dhow that had gone down in the Gulf of Aden in a storm; it had sailed out of Aden and has never been seen or heard from since. The dhow manager explained that the dhow had not been made in Aden, but in Africa, and was very weak; as an actual fact the other dhows belonging to A. Besse have a reputation for being the strongest-built dhows in the local waters.

Mogadiscio in Italian Somaliland (over 1,200 miles from Aden); to various Indian ports, which are between 2,000 miles (Karachi) and 2,500 miles (Bombay) from Aden, Besse's dhows have been known to have made an occasional trip. 505

The point of all this is that Besse has found it profitable to operate his dhows within a 450-mile radius of Aden, but no farther (see Figure 4).

[102]

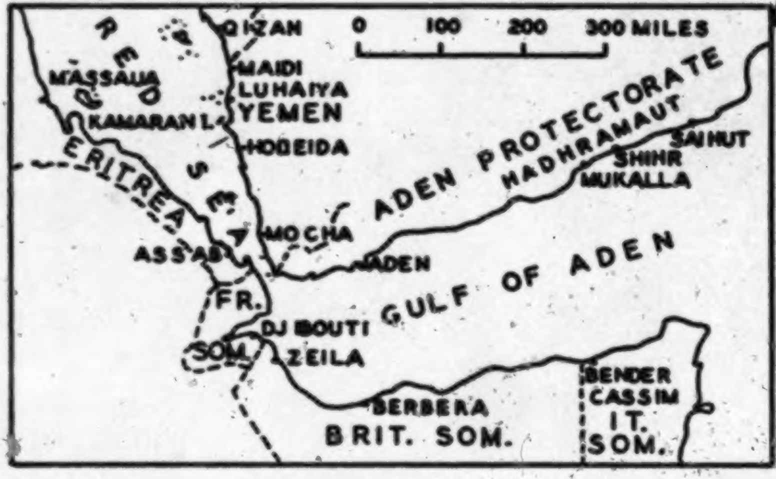
QIZAN
0 100 200 300 MILES
RED SEA
MASSAUA
MAIDI
LUHAIYA
YEMEN
KAMARAN I.
HODEIDA
ERITREA
ADEN PROTECTORATE
HADHRAMAUT
SAIHUT
SHIHR
MUKALLA
MOCHA
ASSAB
ADEN
GULF OF ADEN
FR.
DJIBOUTI
SOM.
ZEILA
BENDER CASSIM
BERBERA
BRIT. SOM.
IT. SOM.

Fig. 4. Map of the southern Red Sea-Gulf of Aden area

The same is true of dhows from other ports in the area, for one finds Aden full of dhows from the same ports to which Besse sends his dhows, but few from ports farther away. Thus it seems that dhows can operate economically to and from Aden within a 450-mile radius. However, more cargo goes out of Aden by dhow than comes in by dhow, and many of the dhows from Yemen and the Somalilands come to Aden empty in the chance of picking up cargoes (see Plate 23—top). It should also be noted that most of Besse's dhows return to Aden empty after delivering their cargo in the 450-mile radius. The above does not apply to the deepwater ships coasting down from Arabia to Africa, as these ships make only one trip a year. The above case for Aden applies only to coasters which make a number of trips a year, always returning to their home port (in Aden or the 450-mile radius).

Vaidya[64] has estimated that in 1944 there were about 5,300 sailing

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[64] K. B. Vaidya, op. cit., p. 17.

505 craft on the west coast of India engaged in coastal trade over the one thousand-mile coastline. These vessels averaged only about forty tons and carried on the average eight-man crews. It is extremely interesting to note that Vaidya[88] concluded that these vessels never made voyages to ports over four hundred to five hundred miles away, always staying within a five hundred-mile radius of their home ports. The only vessels that made longer trips were the larger craft from the Gulf of Cutch and the Sind coast, these craft carrying Indian trade to Africa, Arabia, and the Persian Gulf. Thus in India the same economic balance that is found in the Gulf of Aden governs the coastal trade. These coastal craft would rather return home in ballast than travel out of their arbitrary 'zone' for a cargo.

479 Admiral Paris thought that the dhows could exist in the face of more
465 efficient European sailing ships only because of the extreme economy of the Arabs. Villiers thought that the main reason the deepwater dhow
505 could still exist in large numbers in the present day of steam was in the main because of the date-storehousing ability of the dhow, which did not tend to flood the market with dates. However, as we have seen above, the 1949 crop of dates entered Aden under steam, rather than on Kuwait dhows.

No, the answer to the question is of a more fundamental nature than either Paris' or Villiers' reason. It is this writer's opinion that the main and only reason why deepwater dhows can survive in this day and age is the system of sailors' wages—the 'debt system.' The Arab capitalists' philosophy is 'Get a man in debt and then never pay him enough to get out of debt.' Certainly this is true about the deepwater Arab craft that sail from the Persian Gulf and the Gulf of Oman to Africa; the crews are paid once a year, so that by the time they do receive their pay the advances made to them usually consume most of their wage. This would tend to be less true if the sailors were paid more frequently. It is interesting to note that A. Besse operates his coastal dhows under the debt system and shares, paying off only once a month and giving out liberal advances in between to keep the sailors in debt.

However, this is not the most important factor keeping the large number of coastal craft operating in areas like the Persian Gulf, the Gulf of Aden, the Red Sea, and the west coast of India. These coastal craft provide a very valuable service by moving cargo in small amounts to ports not usually visited by steamers; steamers find it uneconomical to make short hauls of small cargoes. However, what may be considered a small cargo for a steamer may fill several dhows. In many instances these coastal
craft furnish the only transportation to many small off-the-trac
ports.

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[88] Ibid., p. 103.

craft furnish the only transportation to many small off-the-track ports. In addition to this it must be remembered that the dhow (or other native 502 coastal craft) can navigate shallow harbors and creeks, while a steamer could not get closer than several miles. Thus there will always be a place for these short range coasters. However, the future of the deepwater dhow is another question.

The debt system has worked for centuries to the economic advantage 426 of those financing the dhows, and to the economic disadvantage of those 465 working on them. It has been impossible for the sailors to break away, as 505 they can never work for another *nakhoda* when in debt to one. There is only one way to break away, and that is to pay the debt. Becoming a farmer or a fisherman does not help, as they usually operate under the debt system also.

On its face in such a financial set-up the merchant has everything to gain and absolutely nothing to lose. In the case above (where the shares, and thus the sailors' wage, were worth about 150 rupees and the merchant made eighteen per cent on his investment on the dhow), if the dhow had made only one-half of what it had, the merchant would still have received about ten per cent on his investment, but the poor sailors would have received only 75 rupees ($22.50) as a year's wage. Thus the dhow can compete against steam only at a sacrifice of the unfortunate economic slaves sailing the dhow. The dhow sailors do all the stevedoring, maintenance work, and sailing for their lowly share of the dhow's earnings; if the sailors received a decent wage (even if only on Eastern standards), the deepwater dhow could not stay afloat as a cargo vessel. Coastal craft operating short distances do pay higher wages on the average than the deepwatermen.

However, the advent of the large oil companies in the Middle East has provided a means wherein the sailors can escape from the bonds of economic slavery. By making jobs which pay good money (on Eastern standards) dhow sailors are able to free themselves of their debts and become free men. We have seen above that the oil companies in Saudi Arabia and on Bahrein Island have decreased the number of boats the pearl fisheries can send out, as they cannot get divers to work for the wage they can offer. Kuwait has long been able to keep a large deepwater cargo fleet of *bhums* on the waters around the Indian Ocean because Kuwait had a surplus of cheap labor—there was little else to do in Kuwait besides work in marine activities. Now that the Kuwait Oil Company has made jobs available to the local Arabs, the cheap labor market is gone for the Kuwait *nakhodas*. Thus as the standard of living is increased and cheap labor

426 becomes no longer available, the deepwater dhow is doomed. The dhow
465 cannot operate in competition with steam if it has to pay the sailors re-
505 spectable wages; that is, as long as the merchants demand one-half of the
dhow earnings.

511 While traffic in human cargo is virtually a thing of the past, the dhows that coast along the Arabian, African, and Indian shores still have slave crews on them. Although not owned bodily, the crews are bound economically to their masters, the *nakhodas,* while the *nakhodas* themselves are economic slaves of the merchants. But, while the crews get little actual compensation when the pay-off finally comes, they are happy and well-fed and have known nothing else. Allah is compassionate, and there is always a Paradise waiting for their poor souls!

Bahrain MZ2
Maritime Arabs MK2

B
871 time and then break up and disappear. Few care whether
185 they live or die. One of the Bahrein sheikhs made a visit
658 to England at the invitation of the British Government
about three years ago. On his return he collected nearly a hundred thousand dollars for the founding of a free public school. A large building was projected, but by inefficiency and carelessness, if not worse, the entire sum was spent on the first story of that building. Now the project languishes and seems about to die, purely because nobody cares whether it lives or not. Even Koran schools are few in number and poor in quality. There is nothing like the diffusion of education that prevails in the inland
M desert towns.

463 Although the vast majority of the people in these towns
226 are pearl divers, there are a few fishermen and a smaller number who gain a precarious livelihood as sailors in Arab sailing ships. There are abundant supplies of fish in all these harbors, but fishing is a very unpopular occupation. It is hard, disagreeable work, and the men must frequently be out in the little boats all night. When times are good and the captain's allowances liberal, nobody is willing to fish. When the pearl catch is bad or the price low every one feels poor, many eke out their small resources by this additional work, and fish becomes plentiful and cheap.

M
505 There were once many sea-going sail boats engaged in carrying various cargoes from port to port in this district, for the Arabs are bold navigators and can travel in these ships from India to the Suez Canal. They still bring goods from the various East African ports to Arabia, and rarely fail to make these long trips successfully, but the work is hard, and since the steamers of the "Ingleez" have absorbed more and more of the better

505 trade, the profits of a sailing boat have diminished and the percentage of the population that supports itself this way is very small.

505 439 However, since all the food and clothing of the community must be imported, and in places even the water and building material, trade in the Persian Gulf reaches large proportions. Rice is imported by hundreds of thousands of sacks each year. A special steamer of the Standard Oil Company brings kerosene oil from New York. There is a large importation of the stronger and cheaper grades of foreign cloth. The rice and kerosene and the various imports from India, such as dishes and lanterns and all sorts of gaudy trinkets, are brought in steamers. The British India Steamship Company has a line of coasting steamers which call every week at the larger Gulf ports. Some food materials are brought from Mesopotamia and from Persia, and these smaller importations from near-by ports are often brought in sail boats. All of these imports are paid for indirectly with pearls. The last season before the Great War the value of the pearls marketed in Bahrein was estimated at three *crores* or about $9,000,000.

441 515 566 There are no merchants in the whole peninsula that are so rich as the pearl merchants of the East Coast. There are a few of these merchants that could rank as millionaires if their fortunes were measured in American money. These men are more or less educated and have traveled extensively. Many of them take newspapers and read modern books. Their establishments are places of great luxury and comfort, with many of the outward signs of modern civilization. Their houses and offices may be lit by electric lights, and their taste extends even
000 to motor launches and automobiles. The larger ports of

228 all end up in Bombay. The Indians drill, polish, and grade the pearls, and
442 string them on silk; these short strands are known as "Bombay bunches."
439 Before World War II the pearls were sent to India by streamer; today they
509 are usually sent by air from Bahrein, Kuweit, Sharjah, and Dharan. The
pearls are usually sold to Indian merchants in these towns, but occasionally
the Arabs themselves take the pearls to Bombay.

After all the pearls have been sold, the nakhoda figures out the season's
228 profit. The owner of the dhows gets half the profit; the other half is divided
465 among the crew. Most of the pearling dhows out of Saudi Arabian ports are small (not more than 40 feet), with crews of ten -- six divers and four attendants -- in addition to the nakhoda. Each diver and each attendant gets one share in the profits (about 4 per cent); the nakhoda gets two shares, unless he owns the dhow and longboat, in which case, of course, he gets more than half the profit. The number of shares each of the crew, the nakhoda, and the owner get is agreed on at the beginning of the season and may vary from place to place. Many of the pearling dhows out of Kuweit and Bahrein are considerably larger than those out of the Saudi Arabian ports and may have crews of forty or more; on these the nakhoda gets a larger number of shares.

Pearling is a gamble for everyone concerned, from the merchants to the divers. Some seasons are good, some bad; sometimes a boat has bad luck, sometimes excellent luck. A share on a pearling dhow should be worth several hundred rupees, but it may not be worth fifty.

Usually a share on a pearling dhow represents a year's wages, since the
228 pearling industry operates under the "debt system" mentioned above (not
426 to be confused with the "truck system" of pearl fisheries elsewhere, in which the divers are paid off in produce). Under the debt system the divers and attendants are given cash advances during the winter season, when they are not working, and their families are given food and supplies while the season is on. The advances are deducted from their calculated shares, so that usually the worker gets little or nothing.

Thus the divers and attendants are perpetually in debt. Once a worker is in debt to a nakhoda, he cannot work for anyone else during the pearling season; this is one of the laws of the industry. He has virtually sold himself into economic slavery to the nakhoda, who has his services and never actually has to pay him anything, whereas he in effect pays the nakhoda in the pearls he produces. However, it should be remembered that the nakhoda is in turn usually in debt to some merchant, who commonly finances numerous nakhodas.

Kuwait MI1

K

Negro origin, the descendants of slaves, though not now slaves themselves. Many others are of Iranian origin. Almost none are Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

MA 505 565

As the *nakhoda* class is tied to the merchant by a structure of debt, so also are the sailors tied to the *nakhoda* class in the same way. All deep-sea sailing is paid for on a shares system, and there are no wages. Often the *nakhoda* of the deep-sea dhow has an interest in a pearling vessel (though not now to anything like the same extent as in former years), and the sailor may be bound to him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

MA 565 426 465 228 428

The sailors go to sea because they know no other life, and they make a wretched living by incredibly difficult methods. They have no possessions other than the clothes they stand in, and one or two spare gowns, a good headcloth, and a few sarongs. Their toothbrush is the twig of a tree; their ablutions are made five times daily at a mosque well, or in the sea; they know no shelter and rarely have a bed. The younger seamen, I have noticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere.

MA 505 511 ● 342 291 515 501 565

What keeps the seaman a disciplined and more or less contented worker is his hope of reward, principally from smuggling or his own ventures, and his ambition to get hold of a tiny shop in the *suq* of his home town. This is an ambition he rarely achieves. His more usual fate is to die young, especially if he be also a pearl diver.

MA 565 554 165

426 becomes no longer available, the deepwater dhow is doomed. The dhow
465 cannot operate in competition with steam if it has to pay the sailors re-
505 spectable wages; that is, as long as the merchants demand one-half of the
dhow earnings.

511 While traffic in human cargo is virtually a thing of the past, the dhows that coast along the Arabian, African, and Indian shores still have slave crews on them. Although not owned bodily, the crews are bound economically to their masters, the *nakhodas*, while the *nakhodas* themselves are economic slaves of the merchants. But, while the crews get little actual compensation when the pay-off finally comes, they are happy and well-fed and have known nothing else. Allah is compassionate, and there is always a Paradise waiting for their poor souls!

5: Harrison D-4 (1912-1924) 1924 M1 Middle East
Maritime Arabs MK2

who had "escaped from the account book," as the Arabs 466
put it.

The amount that a season's work brings in is now a matter of indifference. However great it may be, all that happens is that the sum is written to the diver's credit on the books, and he is given an advance when he asks for it and the captain is willing to allow it. There are certain times during the year when it is the custom to give these advances—the beginning and the close of the diving season and once or twice during the idle months. A good season means somewhat more liberal advances and a bad season smaller ones. The diver, however, is absolutely at the captain's mercy in all this. As a matter 511
of fact he gets in ordinary years an amount that is sufficient for life, and a more comfortable life than that of the Bedouin. The diver's standards of life, however, are considerably below those of a date gardener in a good oasis. It is to the captain's interest, of course, to have 466
his men more or less well fed and satisfied, and to have 426
the glamour of pearl diving maintained so that others will be attracted to the work, so a great show is made of calculating the season's receipts and the rare man who is not in debt really does get a fairly liberal reward for the season's exhausting labor. The crucial point, of course, is the law that prevents a mistreated and dissatisfied diver from changing his employer or from changing his residence. The captain could afford to give his men an amount that would allow them a considerably better mode of life. Doubtless if public sentiment becomes too threatening, he will do so. The thing he will not do is to consent to any alteration of the law that at present delivers the debtor into his hands,

Maritime Arabs MK2
Bahrain MZ2

M 228 164 such a number of chronic running ears. The lungs are often affected, and all along the diving coast pulmonary tuberculosis is common. This is not remarkable when we know that in the opening days of the season the men frequently dive in water that is so cold that they spit blood. Many return from their summer of semi-starvation and unsuitable diet of rice and dates with their gums sore and bleeding from scurvy.

Living conditions in the community* are what might be M 511 expected. Disease is common. The death rate is high. Poverty is universal. In good years the standard of life is none too high. In bad years it is reduced almost to the starvation point. During a hard year the food of the divers is poor in quality and scanty in amount almost to the degree of partial starvation. They usually live in date-stick huts, and in the winter must frequently shiver in unwarmed houses because they have no money for fuel.

M 871 212 In such communities there is little or no interest in education. A diver has reason enough, one might suppose, for wanting to know how to read and write and keep his own accounts, but it is rare that one of them knows as much as that, and apparently it is equally unusual to find one who is trying to educate his children so [M 868 that they may escape the slavery that binds him. The boys are frequently taken out to learn pearl diving while B 871 185 658 they are still under twelve. In Bahrein the American Mission has tried for many years to develop educational work of an elementary sort, but has found it practically impossible because there is no demand for such things. The considerable Persian community in the city has made efforts from time to time to establish educational work for its own boys. The Persian schools exist for a little

*[of pearl divers -- Analyst]

5: Harrison D-4 (1912-1924) 1924 M1 Middle East
Maritime Arabs MKa

The larger ports of
Kuwait, Bahrein and Dibai have also a large community 468
of artisans and lesser merchants. These serve not simply 441
the local diving population, but also act as manufacturers 439
and wholesalers for the whole of Central Arabia. Practically the entire import and export trade for the interior of the peninsula goes through these three towns, and the merchant and artisan communities are large and prosperous.

It is difficult to be optimistic about the general situa- 735
tion in these pearl-diving communities. The actual ma- 511 ●
terial condition of the divers is bad enough, but worse 454
by far is the discouragement and despair that have set- 426
tled down upon the whole community. No one tries very hard to get out of debt, for he knows that barring some unforeseen miracle, he cannot do so no matter how long and hard he works and how economically he lives. There is little thrift; a stranger is often shocked by the waste that divers show in their personal and household expenditures. There is not the slightest effort, for instance, to discover what sort of clothing will give the most service for the money invested. Expensive or cheap, economical or wasteful, it is all the same. With luck when the present supply of money is gone, the captain will make another liberal allowance, and nothing better than that can be hoped for, no matter what economy and thrift are practised.

The conditions outlined above are those that obtain in
the northern towns, chiefly in Bahrein. There is a sec- 121
ond large diving community in the region known as the Pirate Coast, whose capital and largest city is Dibai. Its piratical character is a matter of history now long past, but it still makes a good deal of trouble for the British who police the Gulf and maintain order along the coast.

721 Political troubles became acute some ten years ago or
more, and for many years no foreigner was allowed to
land on that coast. It was a double pleasure, then, to be
invited to visit that part of Arabia four years ago. It*
567 is the one remaining nest of slavery in eastern Arabia
and the district is still troublesome at times to the bearers
of constituted authority, but nothing of that sort is ap-
576 parent to the visiting doctor. The rich and the poor
alike are most courteous and pleasant hosts.

228 In this district* the pearl-diving system is the same as
461 in Bahrein, but the men do not work nearly so hard.
They set out to work later in the season, although if the
temperature of the water were the only element in their
decision, they might be at work sooner, for they lie far-
ther to the south and their water warms up considerably
before that near Bahrein. They return to the shore
oftener and show much less energy in their work. The
pearl banks in the region of the Pirate Coast are less rich
than the Bahrein banks, and as might be expected, their
catch is much less valuable than that of the boats farther
511 north. It is interesting to see that divers on the Pirate
Coast live at about the same general level as those in
Bahrein. They could not live at a much lower level, for
it would mean starvation. The larger receipts in the
Bahrein area have as their only result the creation of a
much richer class of pearl merchants than the similar class
on the Pirate Coast.

567 Unquestionably it is the slaves who have reduced the
464 standards of what a day's and a season's work ought to
461 be to its present level on the Pirate Coast. Most of these
slaves are negroes from Africa. A few are Baluchs
from the Makran coast between India and Persia. They
do not number over one-half the divers, probably far

*[The Pirate Coast and its capital at Dibai --Analyst]

Kuwait MI1

K MA 505 565

Negro origin, the descendants of slaves, though not now slaves themselves. Many others are of Iranian origin. Almost none are Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

MA 565 426 465 328 428

As the *nakhoda* class is tied to the merchant by a structure of debt, so also are the sailors tied to the *nakhoda* class in the same way. All deep-sea sailing is paid for on a shares system, and there are no wages. Often the *nakhoda* of the deep-sea dhow has an interest in a pearling vessel (though not now to anything like the same extent as in former years), and the sailor may be bound to him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

MA 505 511 342 291 515 501 565

The sailors go to sea because they know no other life, and they make a wretched living by incredibly difficult methods. They have no possessions other than the clothes they stand in, and one or two spare gowns, a good headcloth, and a few sarongs. Their toothbrush is the twig of a tree; their ablutions are made five times daily at a mosque well, or in the sea; they know no shelter and rarely have a bed. The younger seamen, I have noticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere.

MA 565 554 165

What keeps the seaman a disciplined and more or less contented worker is his hope of reward, principally from smuggling or his own ventures, and his ambition to get hold of a tiny shop in the *suq* of his home town. This is an ambition he rarely achieves. His more usual fate is to die young, especially if he be also a pearl diver.

466 body and soul. The one redeeming feature of the system 426 is that debts are not transmissible from father to son and theoretically each boy starts out with a clean slate, but too often the filial loyalty of the son is appealed to and he assumes his father's debts. This plan allows the old man to retire from his life of hardship. Nothing suits the captain better, for thus the boy is deprived of his only chance to keep free from the slavery that has bound his father.

465 But in spite of its financial drawbacks the work has a great fascination for the Arab, and this is largely because of its element of chance. The Oriental is an inveterate gambler, and the Arab is no exception. Some years the reward of an individual diver may be next to nothing. Another season he may make a thousand *rupees,* or about three hundred and fifty dollars. Over night the whole aspect of the season may change. A pearl worth fifty thousand *rupees* may be discovered at any time. The largest pearl sold locally during the past ten years brought one hundred and twenty thousand *rupees.* Arabs tell of boats whose divers have cleared over two thousand *rupees* or more in a season, but such mythical individuals are hard to find. It is far easier to find the man who has failed to make two *rupees.* However, to do the industry justice, such individuals are rare also. In fair seasons the average must lie somewhere between three hundred and seven hundred *rupees,* or one hundred to two hundred and fifty dollars.

465 517 At the end of the season the profit, such as it is, is reported and the money divided. The divers each receive their share, and the assistants each two-thirds of a share. Men in debt receive a more or less liberal allowance, and the town is filled with rejoicing divers who have just re-

turned from four months or more of exhausting work, 465
during which time they have been half starved and have 517
had no opportunity of finding enjoyment and pleasure,
legitimate or otherwise. The result[1] is precisely what 435
might be expected. Persian rugs in the bazaar go up 517
to twice their proper price as does anything else that the
divers may fancy. Meat reaches the highest price of the
year, and the same is true of fish, which food the divers
enjoy above everything else. Gambling is all but universal.
Immorality flourishes. This state of affairs
lasts a month, perhaps two months. Then things gradually
settle down into the regular winter stagnation until
the next diving season.

The same thing happens on a smaller scale when the 517
season opens. Advances are made to the men. Feasts 288
are held. There is much good fellowship and coöperation 465
as the preparations for the season are completed.
The chanting of singers can be heard late into the
night. The money advanced by the captains makes a
great show as it is spent. Strangers come in from far
and near to go out and dive with the local men, and the
city wears such a gala appearance as it scarcely puts on
again till the next season.

It is thus that an astonishingly attractive tinsel surface 565
is maintained over an industry and a manner of life that 228
even for Arabia are bitterly sordid and exhausting. The
pearl diver's life is one of poverty, hard and cruel. In a
bad season it is with difficulty that he gets enough to eat.
His lot is distinctly worse than that of the date cultivator.
Diving wrecks the health as no other Arabian occupation 228
wrecks it. The high pressure of the water at great depths 164
frequently bursts the ear drums, and it is a safe conjecture
that no community of equal size anywhere can show

[1] [of divers returning with their wages --Analyst]

228 for the minimum winter air temperature to be in the middle
464 forties; during this period the sea water temperature in shallow
132 water will be in the low sixties.

228 Pearl diving requires that the diver's body be almost continu-
147 ally in the water. From experience the Arabs have found that
464 the surface water temperature has to be about 85° F. before
132 continued deep-water diving is feasible; thus the main pearling season (*al-ghaws al-kabir,* or "great diving") averages four months — from June into the first week of October. During this time the maximum surface water temperature exceeds 90° F. (in August) off Hasa. O'Shea states that on the Trucial Coast *al-ghaws al-kabir* often lasts until late October, the water apparently remaining warmer longer there than further north.[19] In addition to *al-ghaws al-kabir,* there are two other seasons: the "cold diving" season (*al-ghaws al-barid*) running from April to May, and the *mujannah,* running from October to March. The smaller boats run out in the shallower (warmer) waters for *al-ghaws al-barid* and act as a barometer for the season, while the *mujannah* is worked by waders who work along the shore when the tide is out, many equipped with glass-bottom "look boxes."

● 527 For *al-ghaws al-kabir* the various fleets, whether from Kuwait,
228 Bahrein, or the Trucial Coast, leave port en masse with flags flying, to the beating of drums and Arab chants. The few boats from the smaller ports slip out without fanfare. It is a stirring sight to see these fleets of dhows maneuver with their sweeps and then set forth under huge spreads of lateen sails, with their freshly oiled, burnt-brown hulls glistening across the aquamarine water, like some ancient Phoenician or Roman fleet.

228 An admiral represents the pearl fishing fleet of each port. It
502 is the admiral's boat which leaves the port first, and the admiral's duty to determine when the water becomes too cold for continuous diving. It is considered improper (by the owners) for the *nakhoda* of any large vessel to leave the pearl banks before the admiral leaves.[20]

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[19] R. O'Shea, *op. cit.*, p. 137.

[20] The admiral of al-Khobar, Saudi Arabia, now works for the Arabian American Oil Company, for al-Khobar no longer sends vessels out to the pearl grounds.

228

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FIG. 16—Emir Nasir of Darin with a season's crop of pearls from his pearling jalibuts.

Pearl oysters are found from low-tide level to 20 fathoms. There are pearl beds off the whole Arabian coast from Bahrein to Ras al Mishʽab, but the best banks are north and east of Bahrein Island, and the best beds between 5 and 10 fathoms. The beds are not charted; indeed, this would be useless, since they shift periodically. A bank may be sterile for several years and then suddenly produce the finest pearls of the season. The Arabs believe that the best pearls—the largest and whitest—come from deep water, though some of the more pessimistic say that the Persian Gulf never yields more than two first-class necklaces in any one season.

● 527 The pearling boats leave Bahrein, Kuweit, and the Trucial Coast of Oman for the main season en masse to drum beating and chants, but the 502 few dhows from the Saudi Arabian ports slip out unceremoniously. The Bahrein fleet works up, the Kuweit fleet works down, and the small Saudi Arabian fleet works in the middle.

The *nakhoda* (captain) of a pearling dhow orients his craft at the edge of a bed so that when the anchor line is paid out, the dhow will drift across the bed. When the divers start to get only a few oysters, the dhow is allowed to drift a little. When it is completely across the bed, the crew moves it back to a fresh location with the sweeps, to the accompaniment of drum beating and chants. It is here that the nakhoda shows his real skill and knowledge, for he must keep his craft in virgin water.

223 Pearl diving in the Persian Gulf is essentially "skin diving." The diver wears only a loincloth and leather fingers to protect his fingers from sharp 292 coral and shells; a horn noseclip and cotton or beeswax to stuff into his ears complete the "equipment." The use of drags, dredges, or compressed-air diving suits has been prohibited by the British, long the protectors of the Persian Gulf, and only the inhabitants of the Gulf—Arabs and Persians—can work the pearl fisheries.

point of vantage. Before every prayer the Arabs first perform the required 788
Moslem ablutions of washing their hands, face, feet, etc., in sea
water; then they go through the prayer ritual facing towards Mecca with
their headcloth spread in front of them as a prayer rug. It is for determining
the direction of Mecca that the compass on a large dhow is often most
used! The first prayer is the dawn prayer said in the first greying light of
dawn; the morning prayer takes place when the sun is close to the meridian;
the afternoon prayer is called when the shadows begin to lengthen;
the evening prayer is said shortly after the sun sets; finally, the night prayer
ends the day several hours after sunset. The above applies to Moslem
Persians and Indians as well as to the Arabs; obviously it does not apply
to Hindus or sailors of other religions.

Eating is intimately related to Islamic religion for Arabs and other 261
Moslem sailors, as their three meals come directly after the dawn, the 262
morning, and the evening prayers. In the month of Ramadhan all faithful
Moslems neither drink nor eat during the daylight hours; however, 264
during Ramadhan all activities on land and on sea usually hit a low ebb. 785
In other months breakfast consists for the Arabs of little more than a
piece of unleavened bread with some sweet tea or water with which to
wash it down. Lunch has more to offer, consisting of a mess of boiled rice
with a flavoring of *ghee* (clarified butter) and curried or baked fish (if the
ship has any fish aboard). The main portion of the meal is rice, which is
served on a huge tray, or often simply on a palm leaf mat. The crew
gathers around several of these trays or mats and makes quick work of
the food, using no implements other than their right hand. They take a
little fish (or meat if they are that fortunate), ball a small handful of rice
around it and toss the ball deftly into their mouth, usually without losing
a crumb. Nothing is ever wasted, as someone always scavenges the
last morsel. Supper is essentially the same as lunch.

Often a feast is in order in port; this always calls for the slaughter of a 527
sheep (or goat), a number of which are always kept alive on board. The 252
sheep is usually slaughtered at dawn and is virtually dragged from its
skin into a large iron pot, where it is boiled in water. The sheep or goat
is the *pièce de résistance* and is served whole on a huge tray of rice. For a
feast, a curry flavoring or raisins are often mixed with the rice. Various
delicacies from the sheep, such as the heart, liver, lungs, and kidneys, are
cooked separately and served in side dishes. As the feast starts, the sheep 264
is methodically torn apart limb from limb and fiber by fiber. The meat
is always eaten in the same manner: rice is balled around small bits of
meat and tossed deftly into one's mouth with the right hand. In pulling

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gigantic. The mainmast on a large two-masted dhow is about seventy-five per cent of the overall length of the craft; for a 150-ton dhow it is a massive tree trunk that will tower more than seventy-five feet above the deck and have a diameter of over two feet. The mast is not tapered much, being only slightly smaller at the top than at the bottom. The huge size is necessitated by the fact that, because of the way the Arabs sail, the mast must at times stand unsupported with the sail raised and working. The main yard is equally massive, attaining almost the overall length of the vessel but having a diameter only about one-half that of the mast. The yard is a tapered spar made of stout poles fished and lashed together. On a 150-ton dhow the main yard may weigh over three thousand pounds and the largest mainsail may weigh up to one thousand pounds. This four-thousand-odd pounds of teakwood and cloth is raised solely by manpower using a two-part, twofold purchase. 502

When the dhow is ready to sail, the longboat must be hoisted and stowed, and the anchors must be raised. In rough weather a large dhow may lay down four or more anchors, as the moorings are usually foul. The anchors are raised to the surface without any tackle, and then they may be brought aboard by a fall from the masthead.

Before the mainsail may be raised on an ocean-going dhow the huge sail must be bent to the massive yard by a series of robands along the whole head. After the sail is bent to the yard, it is secured lightly in stops, so that the yard may be hoisted with the sail neatly furled on it. After the yard is finally mastheaded and the halliards belayed, the sail may be released by a tug on the sheet, which breaks the sail out of the stops. The sheet acts as a rip cord and sends the sail billowing out like a parachute; if the breeze is light, the sail will flutter out like a flag, but if the breeze is fresh, the sail will open with a cannon-like roar. On smaller coastal dhows the sail is not gathered onto the yard in stops, the yard being simply raised with the sail in sailing position.

However, the yard and the sail are by no means raised as easily as one might gather from reading the preceding. As was pointed out above, the yard and sail on a 150-ton dhow may weigh over four thousand pounds and are hoisted by sheer manpower, using only a two-part, twofold purchase. Raising the yard and sail is a great occasion on any dhow, large or small—not by way of celebration, but because it represents so much work. There is a great ritual in hoisting the yard, the ritual becoming more important the larger the dhow. With the order to raise the yard, the sailors start a native song and dance; the pace quickens, and at an appointed place in the singing the sailors fall to the halliards. The halliards are at- 533 535 502

533 tacked almost savagely as the men chant praises to Allah and stamp the
535 deck as they shuffle by for another chance at the halliard. When the yard,
502 with the sail gathered in stops, is halfway up, the sailors may stop working and go into a dance, snapping their fingers and stamping the deck. On a large ocean-going dhow of 150 tons, it takes a whole hour to masthead the yard—about one-third of which is spent in dancing and singing. On a smaller dhow there is much less organization in raising the sail, but it is usually done faster with less song and dance.

502 Once the sail is raised and the dhow is under way, the sailors' duties are usually completed for a considerable length of time. However, if the weather changes, the sail may have to be changed. Once under way it may take several hours on a large dhow to lower one sail and replace it with a smaller (or larger) sail. The course may also have to be changed at times, regardless of weather changes. The Arab dhow tacks by wearing while sailing downwind; in wearing all hands have appointed stations, where stays, tacks, and sheets must be shifted.[49]

501 There is one more important duty carried out semiannually on the great ocean-going dhows running to and from Africa and India: that is cleaning the bottom. The bottom is usually cleaned and refinished before the dhow makes its return trip (from Africa or India) and after it has finished its seasonal trip. The dhow is moved into a shelving beach at high tide, and the ship is lightened as much as possible by the removal of any cargo and its yards, which are lowered overboard. The mainmast is lowered in its gear to the aft of the V-shaped trough in which it rests. Sometimes, depending on the dhow, it is necessary to completely unship the mast; at other times it is sufficient simply to lower it so that its resistance to the wind (and thus its toppling effect) is at a minimum. It should be remembered that the mast on a medium-sized ocean-going dhow is a massive teakwood spar weighing around five tons, while on a large dhow it may run well over ten tons.

When the dhow is lightened sufficiently, it is kedged into shallow water to the songs and chants of the crew laboring on the anchor lines. With the falling tide, mangrove pole props are lashed along the gunwales on each side so that as the tide leaves the vessel dry, it is propped up on stilts. With each successive tide change, the stilts must be carefully reset, as the vessel is partially refloated. To allow a large dhow to topple over is a serious matter, as it may have to lie there until a spring tide lifts it.

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When the tide has receded sufficiently, the sailors set to work removing the old paying-stuff with scrapers. After this is removed they immediately start to put on the new compound, a mixture of tallow and lime, in thick layers with the flat of their hands. As soon as the task is finished, the dhow is kedged into deeper water, re-rigged, and is ready to sail. If no planks have to be replaced, this operation should not consume more than two or three days. A unique though rather incredible means of cleaning the bottom of an Arab dhow is recorded by Villiers,[60] who relates that, while becalmed off Oman, the sailors on the *bhum* on which he was sailing dived overboard, and scraped the sea growth off the ship's bottom while swimming slowly from side to side! The *bhum* in this instance was drawing thirteen feet of water. 501

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All work on a large dhow is done by brute strength, and when the crew is working, the pace is very strenuous. All hands carry out orders day and night with the same fanatic vigor—it almost seems as though their lives depended upon the particular task they were doing at the moment. The *nakhoda* plays no favorites; when the tempo becomes too fast, those too old or feeble will drop out or be given a sea burial in a cover of palm fronds. Thus it is easy to understand why, when there is no work, all hands are to be found asleep. Thus have the dhows sailed for centuries on their unhurried voyages, and so they will probably continue for centuries. Of all the crews—Arab, Persian, and Indian—the Arabs from Kuwait attack their work with the most energy, almost fanatically. 505

At times the large deepwater dhows still have a pomp and ceremony about them that give them a dash of color never to be found in coastal dhows. Whenever coming into a large port that can supply the Arab sailor with the diverse entertainment that sailors of all lands expect after a long voyage, there is a great celebration. This consists of the dance so familiar among male Arabs throughout the Arab world—dull shuffling, agitating, jumping and hopping, accompanied by the loud noise of snapping fingers and moaning music from drums and tambourines. Sometimes the sailors get so wrapped-up in their dancing while entering a port that they are late in executing orders. Quite naturally, the longer a dhow has been at sea and the farther it is from its home port, the greater the celebration. 501 535 ●

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On even the largest Arab deepwatermen, the crew has no quarters, as there is no 'below'; all hands live on deck, finding the softest place they can. Usually the sailor's clothes—a nightshirt-like gown or a sarong and 501

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[60] A. Villiers, SS, p. 298.

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545 tality of the Arabs and Muslims and more tra-
517 ditional in the realm of their culture. But also in this domain the Arabs of Palestine cannot boast of significant achievements. There are a few companies of actors all of whom perform according to patterns of Oriental tradition although attempts are being made to bring about a synthesis between this tradition of East and the conventional forms of the West. However, none of these theater troupes has risen to fame
533 in the wider Arab public. This statement is
517 equally true with regard to the Oriental orchestral groups of men and women musicians. While they succeed to earn their livelihood in the radio studios and at gatherings, weddings etc., none of them has yet acquired renown across the country, and certainly not in other Arab lands. When the Arabs of Palestine wish to enjoy the presentations of a famous group they invite one from Egypt. Incidentally, it is a widely prevalent custom that the orchestral leader or musician composes the songs which he performs, but the local Arabs have not attained distinction in this domain.

545 Theater and singing are also cultivated in amateur circles. As a matter of fact, the field of dramatics has more amateur groups than professional troupes, and there are a number of clubs dedicated specifically to stage performances. Several schools promote non-professional theatrics. Palestine has two competitive associations of Arab stage artists, both of them under the leadership of authors and script writers. These two organizations are the Society of Arab Actors under the direction of Khalīl Baydas and the Federation of Palestinian Artists headed by al-Jawzī who is a Christian Arab.

Maritime Arabs MH2
Bahrein MZ2

less than that, but their attitude of listlessness and indifference M 567
has tended to pull all the rest down to their 464
level. Just why slavery never took root in Bahrein, why 461
the Arabs there never bought slaves to do their diving, B
is difficult to see. It seems such an easy way to get rich. [567]
One reason why Bahrein is a much stronger community financially now than its southern competitor is the fact that slaves have never been brought in to any large extent.

It is a great temptation, this opportunity to have one's M 567
work done by slaves, and nothing could seem to offer greater profits. The slaves have no rights. They can be punished if they show less diligence than their owner thinks adequate. They receive no wages at all, only such food and clothing as their master sees fit to give them. Arabs are not the only people that have been deceived by this fallacy. We believed it ourselves a hundred years ago. It has been a disastrous policy from every standpoint. Nothing could exceed the indifference and laziness of the average slave under such conditions. The money spent on food and clothing for these slaves brings a smaller return in service rendered than any wages paid in Arabia. Of that much any one is sure who has watched them work, or rather has watched their very successful M
efforts to avoid doing any work. Prostitution is 567
commoner on that coast than in any other eastern Arabian 548
community. Slave women are the toys of any man who buys them, and what the Pirate Coast sowed in its treatment of helpless women slaves, it is reaping in an atmosphere of degradation that envelops the entire community from the lowest to the highest.

As passive resisters these slaves are superb. I have M
seen one of them, disgruntled by some mistreatment or 567
insult, simply lie down on the job and no expostulation 158

Notes

554x 1. Details about the personages are, of course, liable to change rapidly. The preparation of this present chapter was completed on March 15, 1946. Here and there later details were listed.

2. Similar to the "town and the (daughter) towns thereof" in Biblical language.

3. These two families are predominantly influential in the rural area, although their members are becoming more and more concentrated in Jenin. The urban center of Jenin itself is subject to the control of the 'Abd al-Hādi and 'Abūshī families.

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593 4. Most of the important urban families trace their genealogy back to personages and heroes of early Islamic history. We cannot examine here the authenticity of these traditions which are generally weak, and hence will record them in the name of those who cherish them, i. e. in the name of the respective families.

553 5. It is the established practice of ordinary families to add to their sons' names that of the father. Thus, for example, Muḥammad Amīn Ṣalāḥ would be Muḥammad, the son of Amīn, the son of Ṣalāḥ. Noble families, however, and particularly those connected with the Muslim-religious apparatus, have the custom to precede the boy's given name by the name of "Muḥammad." The Ḥusaynī family, therefore has a Muḥammad Amīn, a Muḥammad Rafiq, a Muhammad Mahdī and many others. In

553 the Nashāshībī clan there is a Muḥammad Isʻāf etc. "Amīn," "Rafīq" etc. do not represent the father's name, but the given names of the individuals following the general honorific designation "Muḥammad." In such cases "Muḥammad" is placed in parentheses.

554x 6. Concerning his "election" and appointment see chapter 8.

7. He himself and his followers do not recognize the legality of this dismissal. It is their view that the government had no right to remove Ḥājj Amīn from his post as muftī. As to his office as president of the Supreme Muslim Council, he was elected for "life," according to the Council constitution (ordinance) of 1921. For details see chapter 5 of this study.

8. There is no family kinship between the Dajānīs of Jerusalem and the Dajānīs of Jaffa who also represent an important family. "Dajānī" as a family name is found in several other places.

9. For details about this conflict see chapter 14.

10. Other families (mentioned farther on) also derive benefits from this waqf. These families have the tendency to consider themselves descendants of the Tamīmī family or its branches. This group in general represents more of an association of families than one family. The name at-Tamīmī appears in Hebron principally as a designation added to another surname.

2. Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2

Kuwait MI1

MA 471 426 565 When a deep-sea dhow is built, at least some of the money is put up by the *nakhoda* himself and his family. It is the first essential of the *nakhoda* that he should be from a family of standing in the community, which will pay its debts. Just why such families cannot finance a dhow by themselves I was unable to discover, but the Arab, apparently, has no objection to carrying on business under a cumbersome structure of debt. The merchant, backed by the Sheikh or the ruling family, backs the *nakhoda's* family, who support in turn a trusted and experienced member to take command of the dhow.

MA 565 871 867 It is customary for the boys in such families to go to sea while very young, but they never work as sailors. They are always privileged: no sailor can become a deep-sea *nakhoda*, since obviously if his family is of standing, he would never serve before the mast. The children sail with him sometimes from the age of six or seven, though not regularly. They will make one or two long voyages, looking on and learning but not actually doing anything; then they will remain at home a year or two before going out again. They take command very young. Schooling, at least in 1939, was normally restricted to the local Koranic schools, and rarely occupied more than three months in the year. Only merchants' sons went to the colleges of Iraq, Egypt, and Syria.

MA 565 554 505 Gradually the head of a *nakhoda's* family may attain the status of a lesser merchant himself, though his merchandise is generally limited to the wherewithal to build ships, which comes up in his own dhows from the Malabar coast. But a *nakhoda* himself almost never becomes a merchant, and a merchant's son never becomes a *nakhoda*. Nevertheless, the profession of conducting deep-sea dhows about the waters of the Indian Ocean is a highly respected one, and the shipmasters of Kuwait are, on MA [46[illegible]] the whole, a very competent and knowledgeable class, though few of them can practice much astronomical navigation. Even their long voyages down to Zanzibar or to Calicut are coasting, really down with one monsoon, and back with the other, almost always in sight of land. Their real ability consists in their local knowledge, both of ports and trade.

K MA 505 565 In Kuwait, in 1939 — as now — there were upwards of 10,000 qualified deep-sea sailors. An astonishingly high proportion is of

Kuwait MI1

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Negro origin, the descendants of slaves, though not now slaves themselves. Many others are of Iranian origin. Almost none are Bedouin, for the Arab Bedouin is not a seafaring man. In Kuwait, the callings open to the low-class Iranian are restricted to portering, pearling (either as diver or as tender), and sailing. Both Iranians and Negroes work splendidly, are loyal, competent, and well disciplined.

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As the *nakhoda* class is tied to the merchant by a structure of debt, so also are the sailors tied to the *nakhoda* class in the same way. All deep-sea sailing is paid for on a shares system, and there are no wages. Often the *nakhoda* of the deep-sea dhow has an interest in a pearling vessel (though not now to anything like the same extent as in former years), and the sailor may be bound to him through pearling debts, either his own or inherited. The more iniquitous practices in the pearling business structure have long been on the way out, largely because of the excellent example set at Bahrein, but the debt tradition stands and is almost impossible to eradicate.

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The sailors go to sea because they know no other life, and they make a wretched living by incredibly difficult methods. They have no possessions other than the clothes they stand in, and one or two spare gowns, a good headcloth, and a few sarongs. Their toothbrush is the twig of a tree; their ablutions are made five times daily at a mosque well, or in the sea; they know no shelter and rarely have a bed. The younger seamen, I have noticed, often have no home other than the *suq*, or native bazaar, where they coil down in their rough cloaks for a night's sleep on a bench in a cheap coffee shop, or in the sand. At sea, they stretch out on the deck, beneath the stars, for there is no such thing as accommodation for the seamen or anyone else in most dhows. The officers and the more important merchants live on a bench round the wheel, in the stern of the ship; the seamen lie down anywhere.

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What keeps the seaman a disciplined and more or less contented worker is his hope of reward, principally from smuggling or his own ventures, and his ambition to get hold of a tiny shop in the *suq* of his home town. This is an ambition he rarely achieves. His more usual fate is to die young, especially if he be also a pearl diver.

464 maritime *nakhodas* are having difficulty in getting crews. Many of their sailors, who also operated under the debt system, are now working for oil interests.

464 315 On Bahrein oil began to be developed as early as 1932, just when the pearl industry started its real slide. Oil come late for Saudi Arabia, and it was not until 1945 that the industry absorbed large numbers of native laborers. By then the town populations were so well adjusted that most of the labor came from the desert Bedouins. These jobs with the oil companies at first absorbed the unemployed, but as the oil projects developed they have absorbed more than the unemployed, until now the *nakhodas* of Bahrein, Kuwait, and Saudi Arabia are having an increasingly hard time finding divers; the divers are working for the oil companies and paying off their debts.

The Trucial Coast has yet to have the oil boom wash its shores.
Today many men still make the northern trek from the Batinah
coast, and the *nakhodas* there have little difficulty in finding
556 pearling crews. But the happiest Arabs in the Gulf are the
sheikhs in the oil areas, for even though their revenue from
pearls is at an all-time low, they now get their cut from oil, a
much more lucrative and reliable commodity.

505 trade, the profits of a sailing boat have diminished and the percentage of the population that supports itself this way is very small.

505 However, since all the food and clothing of the com-
439 munity must be imported, and in places even the water and building material, trade in the Persian Gulf reaches large proportions. Rice is imported by hundreds of thousands of sacks each year. A special steamer of the Standard Oil Company brings kerosene oil from New York. There is a large importation of the stronger and cheaper grades of foreign cloth. The rice and kerosene and the various imports from India, such as dishes and lanterns and all sorts of gaudy trinkets, are brought in steamers. The British India Steamship Company has a line of coasting steamers which call every week at the larger Gulf ports. Some food materials are brought from Mesopotamia and from Persia, and these smaller importations from near-by ports are often brought in sail boats. All of these imports are paid for indirectly with pearls. The last season before the Great War the value of the pearls marketed in Bahrein was estimated at three *crores* or about $9,000,000.

441 There are no merchants in the whole peninsula that are
515 so rich as the pearl merchants of the East Coast. There
566 are a few of these merchants that could rank as millionaires if their fortunes were measured in American money. These men are more or less educated and have traveled extensively. Many of them take newspapers and read modern books. Their establishments are places of great luxury and comfort, with many of the outward signs of modern civilization. Their houses and offices may be lit by electric lights, and their taste extends even
000 to motor launches and automobiles. The larger ports of

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also a pearl diver

000 also a pearl diver. Pearling from Kuwait and Bahrein is carried
K on during the season of the hard southwest monsoon in the Indian
MA Ocean, when the big dhows are laid up and there is no ocean
228 sailing. It is therefore possible for the same men to carry on both callings, though in these days the seaman is becoming a little too enlightened to go off cheerfully to the purgatory of pearling.

MA The seaman is also helped by his religion, by his interest in the
565 seafaring life (which has a great appeal of its own) and the fine
581 camaraderie about it, and in many cases by the delights of night
595 life in such ports as Zanzibar and Bombay. If he has no harem of his own back in Kuwait, he is certainly no celibate at Zanzibar. He generally seems to manage a small home in Kuwait after a few voyages, depending upon his own business acumen and the general success of the dhow he serves in. Many *nakhodas* appear to maintain several.

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505 In addition to the merchants, *nakhodas*, and seamen, there is
565 another class of importance in the dhow trade. These are the mates, the experienced officers who, never able to become *nakhodas* themselves because of an unacceptable financial status, very often have more to do with the actual sailing of the dhow than the *nakhoda*. Each big dhow carries at least one such experienced man. Sometimes he is of Iranian origin, and has been sailing since he could walk. Sometimes he is a Negro, member of a trusted ex-slave family, who lives with the *nakhoda* at home or has been
MA brought up in his courtyard.

505 He is always an able mariner, but he is not often trusted to
565 trade. It is not at all uncommon for a *nakhoda*, on the usual East
439 African voyage — which always begins with a long haul and long-winded peddling of dates round the coasts of Southern Arabia, and to Berbera and perhaps Djibouti — to leave the ship for considerable portions of the passage at sea, while he looks after her business interests ashore. For example, in one Kuwait dhow in which I had the good fortune to sail for some eight months, the *nakhoda* cheerfully left the ship at Aden and went on to Mukalla by steamer, to steal a march on the other shipmasters and scoop the cream — he hoped — from the passenger market. Again, he left the ship at Zanzibar, and his mate took her down to the delta of the Rufiji, hauled her out on the beach at Kwale Island south

of Dar es Salaam, loaded her with mangrove poles, and brought 505
her back to Zanzibar again, where the *nakhoda* had ostensibly 565 ●
been trying to assemble passengers and extra cargo for the return 439
to Arabia but in fact had been enjoying a new harem.

Mates are paid by shares, and are, in my opinion, an oppressed 505
class. They carry their own ventures, engage in smuggling on a 565
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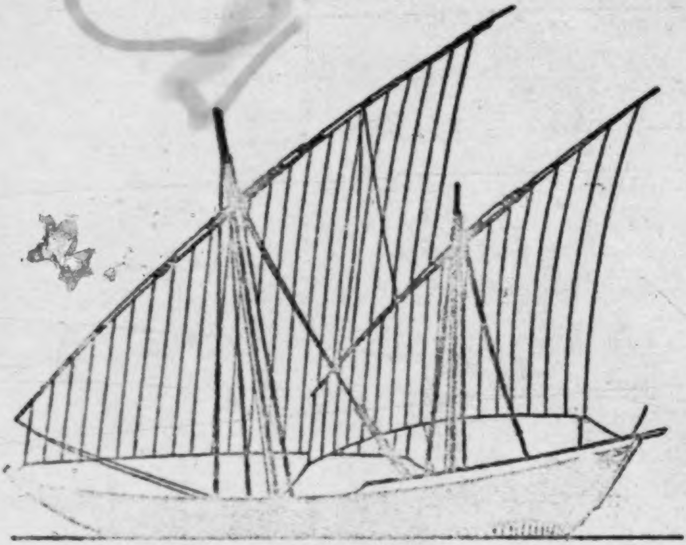

[501]

Baggala

small scale — haberdashery, currency, and so forth — and generally keep the ship's books. They may become *nakhodas* of small *booms*, running to the Basra river; but it is unusual for a man from the more dignified deep-sea trades to descend to this. There is no social status about the *nakhoda* of a coastwise water dhow.

Ships are built by shipwrights who employ no naval architects. 396
Both builders and riggers' lofts are unknown. The ships are put 501
together entirely by eye and take the traditional form either of [171]
the double-ended *boom*, or the carved and embellished *baggala*,
which obviously has a considerable ancestry from the Portuguese
galleon.

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2
Kuwait MI1

MA 396 501 galleon. *Baggalas*, being both costly to build and unwieldy in a seaway, are now unfashionable. A *boom* is both cheaper and much easier to build, and carries just as much. Her sharp stern makes her safer in a seaway, though it is no part of her builder's plan that her *nakhodas* will try her qualities in a storm. Their sailing, he hopes, will be confined to sunny seas and more or less favorable winds; therefore the clumsy lateen rig will do.

K MA 501 505 The lateen is awkward but cheap; it demands a big crew, but these are cheap, too, for they are the sailmakers and riggers as well as mariners, and their only cost is an agreed share in the ship's earnings. The lateen is a grand pulling sail, and the dhows sail handsomely in their own conditions. There is nothing clumsy about them, though their fish-oiled hulls smell abominably and their underwater bodies are preserved by a mixture of tallow and K MA [566] lime, rubbed on by hand and renewed quarterly. The sailors do this work, as well as handle all the cargoes, keep the passengers in order and extol the merits of their ship so that more passengers might sail with her, tow the ship with her own longboat and propel the smaller dhows by sweeps, in calms, and fight for her if need be. The Kuwait dhows today are never armed, though the Suri may be.

III

K MA 505 501 439 A brief description of my personal experiences will serve to illustrate a typical East African voyage.[1] I sailed in a Kuwait dhow of the *boom* type, a vessel of 2,000 date-packages capacity — perhaps 150 tons — which had a crew of twenty-eight. She carried something between 120 and 180 passengers, although her hold was full of salt and rice, and her decks were already crowded with a large longboat, a small gig, and a dhow under construction for sale at Lamu.

K MA 439 505 I joined the vessel at Ma'alla, the native port of Aden. She had already been several months at sea, peddling a full cargo of dates from Fao (by the mouth of the Basra river) around the coast of the Hadhramaut, and to Berbera. When I joined her, she had been hauled out on the beach at Ma'alla and her bottom

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K MA 113 [1] The voyage here summarized is described in detail in the author's *Sons of Sinbad* (New York, 1940).

turned from four months or more of exhausting work, 465
during which time they have been half starved and have 517
had no opportunity of finding enjoyment and pleasure,
legitimate or otherwise. The result[1] is precisely what 435
might be expected. Persian rugs in the bazaar go up 517
to twice their proper price as does anything else that the
divers may fancy. Meat reaches the highest price of the
year, and the same is true of fish, which food the divers
enjoy above everything else. Gambling is all but universal.
Immorality flourishes. This state of affairs
lasts a month, perhaps two months. Then things gradually
settle down into the regular winter stagnation until
the next diving season.

The same thing happens on a smaller scale when the 517
season opens. Advances are made to the men. Feasts 288
are held. There is much good fellowship and coöperation 465
as the preparations for the season are completed.
The chanting of singers can be heard late into the
night. The money advanced by the captains makes a
great show as it is spent. Strangers come in from far
and near to go out and dive with the local men, and the
city wears such a gala appearance as it scarcely puts on
again till the next season.

It is thus that an astonishingly attractive tinsel surface 565
is maintained over an industry and a manner of life that 228
even for Arabia are bitterly sordid and exhausting. The
pearl diver's life is one of poverty, hard and cruel. In a
bad season it is with difficulty that he gets enough to eat.
His lot is distinctly worse than that of the date cultivator.
Diving wrecks the health as no other Arabian occupation 228
wrecks it. The high pressure of the water at great depths 164
frequently bursts the ear drums, and it is a safe conjecture
that no community of equal size anywhere can show

[1] [of divers returning with their wages --Analyst]

505 trade, the profits of a sailing boat have diminished and the percentage of the population that supports itself this way is very small.

505 However, since all the food and clothing of the com-
439 munity must be imported, and in places even the water and building material, trade in the Persian Gulf reaches large proportions. Rice is imported by hundreds of thousands of sacks each year. A special steamer of the Standard Oil Company brings kerosene oil from New York. There is a large importation of the stronger and cheaper grades of foreign cloth. The rice and kerosene and the various imports from India, such as dishes and lanterns and all sorts of gaudy trinkets, are brought in steamers. The British India Steamship Company has a line of coasting steamers which call every week at the larger Gulf ports. Some food materials are brought from Mesopotamia and from Persia, and these smaller importations from near-by ports are often brought in sail boats. All of these imports are paid for indirectly with pearls. The last season before the Great War the value of the pearls marketed in Bahrein was estimated at three *crores* or about $9,000,000.

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000 to motor launches and automobiles. The larger ports of

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158 or threat seemed to stir him. They are exceedingly superstitious, too, and are frequently visited by a familiar spirit, who takes complete possession of the individual. The Arabs on the Pirate Coast are not especially superstitious. They are Sunni Mohammedans, and that sort of faith does not readily lend itself to superstition. However, when one of these negro slaves starts up as if suddenly crazed, and runs around shouting and gesticulating and talking earnestly in a changed voice as if a new personality had possessed him, even the hard Arab masters are a good deal awed and hesitate to inflict the punishment they had planned. These visitations may come at the most opportune times, and it takes more hardihood than the Arab usually possesses to disregard such a warning. I have had such a slave jump suddenly from the operating table when all preparations were complete and I had the knife in my hand to begin an operation for the removal of a tumor from his neck. The operation was to be done under local anesthesia, so the patient was fully conscious. We were thankful that he did not wait till ten minutes later when the operation would have been well under way. These slaves are not shamming in any ordinary sense. They thoroughly believe in the genuineness of such manifestations. They do not thus escape every whipping, but these visitations undoubtedly do protect them from a certain number of terrible punishments at the hands of their Arab masters.

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644 In these diving communities the actual control even of the civil powers rests in the hands of the diving captains and the pearl merchants. The town of Ras el Kheima has a number of divers who regularly dive in boats the captains of which live in Dibai and Sharja. During one winter war of a small sort broke out between

5: Harrison D-4 (1912-1924) 1924 181 Middle East
MaritimeArabs MK2.

the Sheikh of Ras el Kheima and some of the inland 565
tribes of that district, and this fighting was pushed quite 664
vigorously, the city being more or less in a state of siege. It was not difficult to hold the port itself against attack, but as the fighting continued, the diving season came on. The merchants of Sharja and Dibai then sent representatives to settle the matter, for their divers were being held in the city for its defense and had not reported for diving. The Sheikh was far from willing to make peace, but eventually the pressure of these men of money was too much for him, and he was compelled to settle with the tribesmen so his subjects could go out and work for the men whose debtors they were.

Conditions in a diving community are not pleasant to 000
see. They seem the more pitiful because they are so unnecessary. Why should not any dozen men who are out of debt, or a dozen beginners, club together, borrow the capital for the season's supplies, or better, save their money for a season or two and then have the capital sufficient for the enterprise? One-half of an ordinary year's profits would probably meet all expenses and another half season's profits would buy the boat that carries the men. The pearl banks are free, the markets are free. It would be easy to purchase supplies at the same price that every one else pays. The proceeds of such a group would be subject to the same element of chance as every pearl diver's but in any case should be at least twice those they receive at present, inasmuch as the captain's and the pearl merchant's extortions would be avoided. Any dozen divers might do it. The skill required is most moderate and the necessary capital within easy reach.

As a matter of fact the experiment is occasionally tried, but I never knew it to last through more than one

estimate of the number of boats operating in 1946 would be as 228
follows: 464

Bahrein	150	178
Kuwait	100	
Darin, Qatif, Jubail	30	
Trucial coast, Qatar, and Persian ports	250	
	530	

Manning these 500-odd craft were probably not over 10,000 men.

In Oman a strange balance of labor has been set up by the 228
coincidence of the pearling season with the date harvest. Starting 245
about June there is a migration of men northward from the
Batinah Coast to the Trucial Coast; these men work the pearl 221
fisheries. Some go north in caravans, others sail up in their 462
bedens and other dhows. Opposed to the flood of men who make 464
this temporary migration is a counter-migration of women who move southward from the Trucial Coast to the Batinah Coast; these women are hastening to the date groves for the date harvest. Often the women journey southward on the caravans which are returning from carrying the men to the Trucial Coast. Several months later, in September, the journeyers start the return home.

Bertram Thomas states that a considerable percentage of the 228
army of men annually migrating northward to the Trucial Coast 567
is composed of slaves.[17] These Batinah contingents are usually 464
accompanied by a tribal agent who enlists them with some pearling *nakhoda*. The slaves are the best divers, as they have been at it from youth; freemen usually work the ropes in Oman. Slave divers are noted for their lack of fear of diving into deep water or into muddy water containing weeds. So great is the need for labor in the Trucial pearleries that boats sail into the Gulf from as far away as Socotra to join the pearl fishing.[18]

Pearl fishing is a seasonal occupation, as the divers must wait 228
for warm summer water before starting to dive. Probably few 464
people realize there is a winter in the Persian Gulf, and that 132
the water gets so cold that swimming for periods of over five minutes is extremely chilling. In Hasa Province it is not uncommon

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[17] Bertram Thomas, *Alarms and Excursions in Arabia* (London, 1931), p. 238.

[18] Ibid., p. 143

ECONOMIC RELATIONSHIPS

228 426 Pearling is a great gamble for everyone concerned. A share may be worth only 50 or 100 rupees if the take has been poor, but on the average a share should net at least several hundred rupees. It must be remembered that a share usually represents a year's earning, since the pearling industry operates on the "debt system." This is not to be confused with the "truck system," for the workers in the Persian Gulf pearl fisheries are not paid in produce. In the debt system the divers and tenders get actual cash advances during the seasons they are out of work, and their families get food and supplies while they dive. They must pay off their incurred debts with their earnings after the pearling season, but somehow they never seem able to get free.

228 426 672 Until recently, a diver who accepted cash advances from a *nakhoda* had doomed himself to diving until death, and unfortunately death might not be an exit, as his debt was simply passed on to his son or brother, who then went on to incur his own debt. Once in debt a diver is prohibited from hiring to another *nakhoda*—he must repay his debt to the man who gave him cash advances. A diver or anyone else who accepts an advance in the pearling industry has sold himself to economic slavery, for the *nakhoda* owns his ability to work, while the man must support himself. Thus, a diver is bound to return to the purgatory of pearling at the *nakhoda's* call. Since Muslim law prohibits interest or usury the debt system effectively gets around this. The *nakhoda* is usually in turn bound to some merchant in the same way, for he has taken cash advances to give to his divers and attendants.

567 465 In Oman the *nakhodas* often hire their labor from a tribal agent, giving the agent an advance of money and rice. In the case of slaves, the agent takes this to the slaves' master; at the end of the season he collects the balance of the slaves' earnings. Thus the slaves' earnings go completely to his master, who in return clothes and feeds him.

228 656 426 On Bahrein Island the Bahrein Government has, at the suggestion of the British, effected many reforms in the pearling industry with respect to the debt system. Hereditary debts have been abolished; pearl divers on Bahrein now take their debts to

2: Villiers T-5 (1938-39) 1948 MK2 Maritime Arabs MK2
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Zanzibar FM1

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of them Arab. I noticed in the registry office of the Customs building that some were entered as Somali, and a few were registered in the Hadhramaut. No longer did they bring down picturesque cargoes of myrrh and frankincense (if they ever did) or ship out slaves and ivory, ambergris and hippopotamus teeth. They brought salt and dried fish; and when they came, the quantities of hashish and other drugs in the town showed a significant increase. They loaded little at Zanzibar for the homeward voyage, but went on down to the coast of Tanganyika.

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We completed the discharge of our outward goods at Zanzibar, and the crew busied itself for weeks selling Hadhramaut basketware and Aden haberdashery — port of origin, Yokohama. When we sailed, leaving our *nakhoda* behind, our only cargo was the parcel of condemned dates, which the Somali would not have. We passed on down to the delta of the Rufiji River, a place given up to mosquitoes, malignant malaria fever, monkeys, sad Swahili, rain, and the best mangrove poles in the world. Here we lay six weeks, while a cargo of some 142 score of poles was laboriously cut and loaded. For this work, Swahili were engaged to help our crew, and at last the bad dates found consumers. The mangrove poles were ferried out in the dhow's longboat, and paid for in silver shillings to a white supervisor. There were some twenty dhows loading in the Rufiji delta at the time, all for the Persian Gulf.

It struck me as strange that the dhow should spend so much time embarking a cargo in which the total investment was less than $500, for no matter how I tried to figure things out, I did not see how it could possibly be worth her while to haul such a paltry cargo so long a distance, or how she could make enough from it to show a reasonable profit on the voyage. There was certainly something mysterious about this mangrove pole business, and the white supervisor, energetic as he was, by no means knew all that went on. I noticed later, when we sold our cargo to King Ibn Saud's agents at Bahrein for use in a new palace at Riyadh, that the Arab receipt was for 295 score, and the price paid, over 4,000 rupees, approximated $1,200.

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There was some attempt in Zanzibar to regulate the dhow traffic, and precautions were taken to see that there was no slaving, under any guise. A local act requires that evidence be shown

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that any new crew members in Arab ships joined voluntarily; MA
vessels must not be overmanned, and crew and passenger lists 505
must be provided and in order; ships must be surveyed, and kept 567
seaworthy; and *nakhodas* must be certificated. As for the last, the Z
port officials conduct examinations, and the general principle 656
seems to be that if a man is capable enough to bring a dhow down to Zanzibar, certificate or no certificate, he can also be trusted to sail her away again. But the fee for examination is fifteen shillings, and the Arabs complain about it.

We touched at Zanzibar again after loading in the Rufiji, re- K
embarked our *nakhoda* and took aboard a few Swahili school- MA
teachers as passengers (they proposed to hire an automobile at 439
Kuwait to take them to Mecca), filled the decks with coconuts 505
and cases of soap and vermicelli, and departed toward the Persian Gulf again with the first of the broken weather at the end of the northeast season. We did not await the coming of the true southwest monsoons, for it sets in hard; we sailed direct to Muscat, in twenty-six days.

Muscat was depressed and there was no trade there, not even smuggling. All that changed hands, as far as I could see, was a box of Maria Theresa thalers, enormous Austrian coins minted in London for the Omani and available in Zanzibar at a price less than the exchange rate in Muscat. The Arabs turned everything to profit and were prepared to sell anything, even the ship. The K
sailors' pastime in the Rufiji was buying lemons — a thousand M.A
for a shilling — and converting them into sherbet, which they 252
hawked in the *suq* at Kuwait throughout the summer.

Our cargo of mangrove poles sold at Bahrein, the ship returned to Kuwait, to lay up inside a coral breakwater until the new season's Iraqi dates ripened and it was time to go out again. At K
Kuwait, when all her people were returned — several relations of MA
the *nakhoda* had dispersed from Zanzibar back to Lamu and 451
Mogadishu to collect debts — a general balance sheet of the 465
whole round voyage was struck, the profits computed carefully, 439
and divided by a system of shares arranged traditionally. It was 505
not a straightforward statement of income and expenditure; I never saw or heard of any piece of Arab seafaring business which was as simple as that. It was all complicated by prior advances,

usually try to sell their mangrove poles along the South Arabian coast. 439
If they do not sell their poles by the time they get to Oman, they simply put them on the beach and wait until next season. Knowing that the Omanis flood South Arabian ports with poles, the Bahreinis, Kuwaitis, and Persians sail straight for the Persian Gulf and its more profitable markets. Likewise, the Omanis, realizing that the Persian Gulf markets are flooded in the early summer, wait until late summer if they have to sell their poles in the Persian Gulf. Sometimes dhows from Oman carry firewood or fish oil in addition to mangrove poles if they go north to Basra for dates.

If a vessel sells its cargo of mangrove poles a considerable distance from her home port, it may load coral rock as ballast if it is available; this may be sold in Kuwait and ports in eastern Arabia. The coral rock is pried off the sea bottom and is a common commodity for construction [3167]
purposes in a land where building rock is almost as scarce as wood on the sterile sandy coast.

As we have seen above, Persian and Arab ships make two trips to India during a season, usually carrying dates on consignment, but sometimes they carry dried fish, dried fruit, palm leaf mats, and coffee from the Persian Gulf and Arabia. After they have unloaded, they pick up a cargo of the products of India for sale in their native waters. These products consist mainly of teakwood timber, teak dugout canoes, coir roping stuff, coir matting, bamboo, cotton-goods, cocoanuts, chests, chairs, spices, and tea. Cement and tiles are occasionally loaded, but bricks (a very common product of the Malabar coast) are rarely loaded, as they are manufactured in Iraq and shipped out of Basra. Virtually all the teakwood for dhow construction comes from India, and Indian teak dugout canoes have been spread up and down the shores of the Indian Ocean, the Persian Gulf, and the Red Sea by dhows.

The *Periplus of the Erythraean Sea* tells of ships coasting on the African coast and trading cargoes as they went two thousand years ago. But cargoes have changed considerably from those ancient times when alabaster, myrrh, and frankincense were exported from South Arabia and tortoise shell, hippopotamus teeth, cinnamon, and slaves were exported from East Africa.

By 1800, slaves had become the chief cargo out of East Africa, with 567
Zanzibar as the center; however, with European intrusion into the waters of the Indian Ocean, eventually the British more or less successfully stopped the slave trade, which was in large part carried on by the Omanis. It has been estimated that by 1873 there were thirty thousand slaves ex-

567 ported annually from East Africa to the Persian Gulf and Arabia.[24] The term 'human cargo' is no exaggeration, for slaves were packed in the holds of dhows with an eye only towards maximum capacity. There is an old sketch of a small dhow loaded with 156 slaves (men, women, and children) packed into the hold, on the bottom and on two bamboo decks above with only three feet clearance between decks (see Figure 3).[25]

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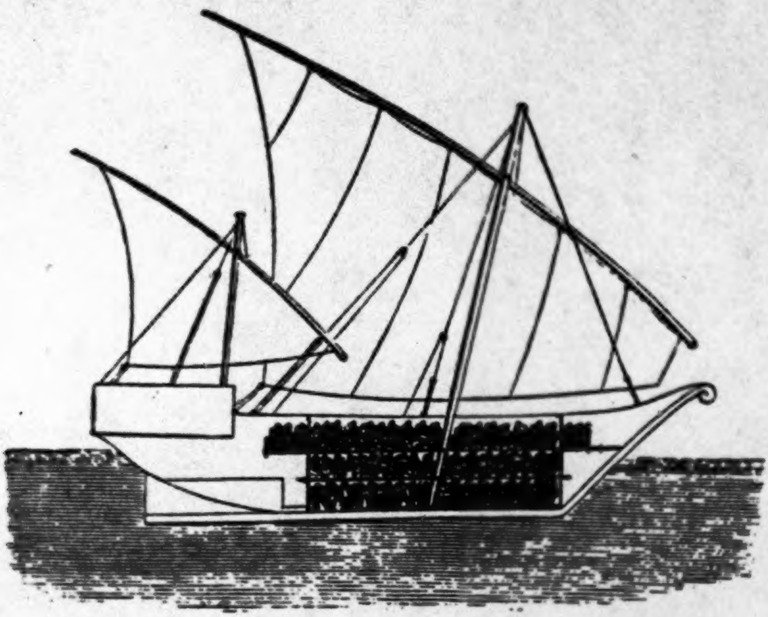

Fig. 3. Slaves packed into the hold of a small dhow, on the bottom and on two bamboo decks, with only three feet of clearance

567 Today slave-running carries such high penalties that no Arab would attempt it with a hold full of slaves on a long voyage to the Persian Gulf. However, the slave trade still operates on a reduced scale in the Red Sea between Africa and Arabia, usually utilizing fast *zarooks* and carrying only a small number of slaves. The trade is still active, mainly because both slavery and white slavery still flourish in Saudi Arabia and Yemen. These two countries signed neither of the two world conventions: the one in 1921 forbidding traffic in women and children and the one in 1933

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113 [24] Anonymous, 'Vessels Used in the Zanzibar Slave Trade,' *The Illustrated London News*, LXII (March, 1873), 208-209.

[25] Ibid.

forbidding traffic in adult women;[26] in 1948 these same two countries 567 failed to file reports on efforts to suppress traffic in women, children, and obscene publications.[27]

Slaving is difficult to stamp out, as the African victims are led to believe that their social status will be bettered. Actually, there is some truth in this, for an African, even as a slave, has a far better life in Arabia, since the Arabs treat their slaves fairly.

British regulations at Zanzibar provide that dhows must carry crew members voluntarily signed on and not in excess of that needed to sail the ship.[28] At Mombasa, *British Regulations for Native Vessels* provides that no man may be signed on as a seaman without satisfying the officials that he has voluntarily shipped, and further that no passengers are to be shipped without the knowledge of the authorities.[29] However, Villiers[30] relates that an Omani *sambuk* intentionally ran down a fishing canoe off Africa and 'saved' two Africans to be sold later as slaves in Arabia.

In essentially the same category as the slave is any other illegal or illicit 439 trade. During World War I gun-running was at a high, but now the trade is not very prosperous. There is considerable cargo smuggled to avoid duties; tea and other goods are run to Persia by the Arabs on the Trucial Coast of Oman—the old Pirate Coast.

The customs and immigration officials in Africa do not have much use 486 for the Arab deepwaterman, with his Arab passengers and smuggling crew. On the other hand, the Arab takes delight in deception, and attempts to confuse the European as much as possible. No large dhow ever [505] carries a visible name; its papers usually contain an official name, but more often the dhow is known by the name of the *nakhoda*, who is usually the nominal owner.

As soon as an Arab dhow reaches an African port, the local officials try to get a passenger and crew list; in this they never succeed, as certain of the passengers always vanish into the native anchorage as soon as the anchor is down, to return after the survey is made. This is easy, as all the native craft are herded into a separated anchorage and often new arrivals have to drive into small spaces in the middle of the anchorage.

Few carry passports or other identification, so actual identification is

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[26] J. L. Carver, 'Slavery's Last Stronghold,' *United Nations World*, II, No. 5 (June, 1948), 24-27. 113

[27] However, in all fairness it should be pointed out that the USSR, Afghanistan, Byelorussia, Honduras, Iceland, and Norway also failed to make reports on the grounds that the problem has not arisen in their countries.

[28] A. Villiers, *SS*, p. 212.

[29] Ibid., p. 190.

[30] Ibid.

721 Political troubles became acute some ten years ago or
more, and for many years no foreigner was allowed to
land on that coast. It was a double pleasure, then, to be
invited to visit that part of Arabia four years ago. It*
567 is the one remaining nest of slavery in eastern Arabia
and the district is still troublesome at times to the bearers
of constituted authority, but nothing of that sort is ap-
576 parent to the visiting doctor. The rich and the poor
alike are most courteous and pleasant hosts.

228 In this district* the pearl-diving system is the same as
461 in Bahrein, but the men do not work nearly so hard.
They set out to work later in the season, although if the
temperature of the water were the only element in their
decision, they might be at work sooner, for they lie farther to the south and their water warms up considerably
before that near Bahrein. They return to the shore
oftener and show much less energy in their work. The
pearl banks in the region of the Pirate Coast are less rich
than the Bahrein banks, and as might be expected, their
catch is much less valuable than that of the boats farther
511 north. It is interesting to see that divers on the Pirate
Coast live at about the same general level as those in
Bahrein. They could not live at a much lower level, for
it would mean starvation. The larger receipts in the
Bahrein area have as their only result the creation of a
much richer class of pearl merchants than the similar class
on the Pirate Coast.

567 Unquestionably it is the slaves who have reduced the
464 standards of what a day's and a season's work ought to
461 be to its present level on the Pirate Coast. Most of these
slaves are negroes from Africa. A few are Baluchs
from the Makran coast between India and Persia. They
do not number over one-half the divers, probably far

*[The Pirate Coast and its capital at Dibai --Analyst]

Maritime Arab MZ2
Bahrain MZ2

less than that, but their attitude of listlessness and in- M 567
difference has tended to pull all the rest down to their 464
level. Just why slavery never took root in Bahrein, why 461
the Arabs there never bought slaves to do their diving, [B
is difficult to see. It seems such an easy way to get rich. 567]
One reason why Bahrein is a much stronger community
financially now than its southern competitor is the fact
that slaves have never been brought in to any large extent.

It is a great temptation, this opportunity to have one's M
work done by slaves, and nothing could seem to offer 567
greater profits. The slaves have no rights. They can
be punished if they show less diligence than their owner
thinks adequate. They receive no wages at all, only such
food and clothing as their master sees fit to give them.
Arabs are not the only people that have been deceived
by this fallacy. We believed it ourselves a hundred years
ago. It has been a disastrous policy from every standpoint.
Nothing could exceed the indifference and laziness
of the average slave under such conditions. The
money spent on food and clothing for these slaves brings
a smaller return in service rendered than any wages paid
in Arabia. Of that much any one is sure who has
watched them work, or rather has watched their very suc- M
cessful efforts to avoid doing any work. Prostitution is 567
commoner on that coast than in any other eastern Arabian 548
community. Slave women are the toys of any man who
buys them, and what the Pirate Coast sowed in its treatment
of helpless women slaves, it is reaping in an atmosphere
of degradation that envelops the entire community
from the lowest to the highest.

As passive resisters these slaves are superb. I have M
seen one of them, disgruntled by some mistreatment or 567
insult, simply lie down on the job and no expostulation 158

567 or threat seemed to stir him. They are exceedingly
158 superstitious, too, and are frequently visited by a familiar spirit, who takes complete possession of the individual. The Arabs on the Pirate Coast are not especially superstitious. They are Sunni Mohammedans, and that sort of faith does not readily lend itself to superstition. However, when one of these negro slaves starts up as if suddenly crazed, and runs around shouting and gesticulating and talking earnestly in a changed voice as if a new personality had possessed him, even the hard Arab masters are a good deal awed and hesitate to inflict the punishment they had planned. These visitations may come at the most opportune times, and it takes more hardihood than the Arab usually possesses to disregard such a warning. I have had such a slave jump suddenly from the operating table when all preparations were complete and I had the knife in my hand to begin an operation for the removal of a tumor from his neck. The operation was to be done under local anesthesia, so the patient was fully conscious. We were thankful that he did not wait till ten minutes later when the operation would have been well under way. These slaves are not shamming in any ordinary sense. They thoroughly believe in the genuineness of such manifestations. They do not thus escape every whipping, but these visitations undoubtedly do protect them from a certain number of terrible punishments at the hands of their Arab masters.

505 In these diving communities the actual control even
664 of the civil powers rests in the hands of the diving captains and the pearl merchants. The town of Ras el Kheima has a number of divers who regularly dive in boats the captains of which live in Dibai and Sharja. During one winter war of a small sort broke out between

K was a lovely little vessel which could carry some fifteen tons. The
MA price asked was 1,000 East African shillings, or about $240. At that price,
501
439 there was no buyer; she finally changed hands at 700 shillings. Lamu was
435 a mangrove-pole port, but I gathered the trade was rather too well regulated for our nakhoda's taste, and we bought nothing.

K Next came Mombasa, a port with a large dhow trade. Some figures I
MA saw in the Report of the General Manager on the Administration of the
439 Railways and Harbours (Kenya and Uganda) showed that the dhow trade
505 was increasing, rather than diminishing. The latest returns I say, for the year ended December 31, 1937, showed that 1,427 dhows had arrived at Mombasa, an increase of ten percent on the previous year. These 1,427 dhows were computed to register -- if they had been registered -- nearly 40,000 tons. Many were Swahili, from Lamu and Zanzibar, but a large proportion was Arab. There was a native harbor set aside for them, and here we sold salt, landing it in our own longboat.
K We got rid of our surviving passengers, gave feasts to merchants and
MA officials of the native harbor (these were a great feature of the voyage,
• [579] and were always accompanied by much monotonous singing and dancing), gathered tidings from brother nakhodas from Kuwait and Sur about trade prospects further south, collected debts, and finally departed toward Zanzibar.

K There were three Indian and one Iranian deep-sea dhows in the port at
MA Mombasa. The Iranian was an enormous vessel of over 400 tons -- the
501 largest dhow I saw anywhere. She was a boom and had been built at
396 Kuwait, but the Kuwaiti sold her because they found such large vessels
439 uneconomic, in bad times, for the mere reason of their two great capacity. They brought too much to sell, when the market was depressed, and they could not wait indenfinitely to dispose of their cargoes because their overhead was too high, despite the fact that everything possible was done to keep down building costs, even to the sending of Kuwaiti shipwrights to the Malabar coast to build big vessels there, rather than carry the timber to Kuwait.

K Zanzibar, at that season of the year, was an even busier Arab
MA port than Mombasa. In the first month of the northeast season,
439 over a hundred ocean-going dhows had arrived at Zanzibar, most

Maritime Arabs MK2

721 Political troubles became acute some ten years ago or more, and for many years no foreigner was allowed to land on that coast. It was a double pleasure, then, to be invited to visit that part of Arabia four years ago. It* 567 is the one remaining nest of slavery in eastern Arabia and the district is still troublesome at times to the bearers of constituted authority, but nothing of that sort is ap- ● 576 parent to the visiting doctor. The rich and the poor alike are most courteous and pleasant hosts.

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*[The Pirate Coast and its capital at Dibai -- Analyst]

565 matization and that in actual life no clearcut di-
55 visions exist.

565 The process of westernization in customs
55 and habits generally accelerates in direct ratio
177 to the rise of the economic and social status. We cannot examine here to what extent the acculturation of those westernized-in-everything is more than skin-deep and to what extent it remains a sort of external trapping, a purely Levantine westernization. But it is obvious that westernization is spreading principally among members of the upper class which attempts to imitate Europeans in dress, patterns of life, layout and furnishings of the home, appearance and recreation. On the other hand, the lower strata of the urban community still cling to many of the eastern customs and traditions. The middle class occupies in this respect a sort of intermediate position, combining the old and new, East and West. In their way of life the two elements can often be clearly distinguished: in public, in the coffee-house, in the club -- Europe, polish and lustre, and clothes tailored after the latest fashion; at home with the family -- the East, with its traditional customs.

565 The lower classes. Petty artisans, people without property, small shopkeepers, peddlers, unskilled laborers, porters, part-time workers, fishermen, unemployed -- and finally beggars, loafers, vagabonds and riff-raff make up the urban masses which, as a rule, are removed from all affairs of society, culture and politics, just as they show little concern for personal problems (among these masses the rate of illiteracy
208 is very high). These crowds are frequently
577 stirred up and dragged into the activities of the

Kuwait MI1

000 also a pearl diver. Pearling from Kuwait and Bahrein is carried
K on during the season of the hard southwest monsoon in the Indian
MA Ocean, when the big dhows are laid up and there is no ocean
228 sailing. It is therefore possible for the same men to carry on both callings, though in these days the seaman is becoming a little too enlightened to go off cheerfully to the purgatory of pearling.

MA The seaman is also helped by his religion, by his interest in the
565 seafaring life (which has a great appeal of its own) and the fine
581 camaraderie about it, and in many cases by the delights of night
595 life in such ports as Zanzibar and Bombay. If he has no harem of his own back in Kuwait, he is certainly no celibate at Zanzibar. He generally seems to manage a small home in Kuwait after a few voyages, depending upon his own business acumen and the general success of the dhow he serves in. Many *nakhodas* appear to maintain several.

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505 In addition to the merchants, *nakhodas*, and seamen, there is
565 another class of importance in the dhow trade. These are the mates, the experienced officers who, never able to become *nakhodas* themselves because of an unacceptable financial status, very often have more to do with the actual sailing of the dhow than the *nakhoda*. Each big dhow carries at least one such experienced man. Sometimes he is of Iranian origin, and has been sailing since he could walk. Sometimes he is a Negro, member of a trusted ex-slave family, who lives with the *nakhoda* at home or has been brought up in his courtyard.

MA
505 He is always an able mariner, but he is not often trusted to
565 trade. It is not at all uncommon for a *nakhoda*, on the usual East
439 African voyage — which always begins with a long haul and long-winded peddling of dates round the coasts of Southern Arabia, and to Berbera and perhaps Djibouti — to leave the ship for considerable portions of the passage at sea, while he looks after her business interests ashore. For example, in one Kuwait dhow in which I had the good fortune to sail for some eight months, the *nakhoda* cheerfully left the ship at Aden and went on to Mukalla by steamer, to steal a march on the other shipmasters and scoop the cream — he hoped — from the passenger market. Again, he left the ship at Zanzibar, and his mate took her down to the delta of the Rufiji, hauled her out on the beach at Kwale Island south

000 K MA 228 also a pearl diver. Pearling from Kuwait and Bahrein is carried on during the season of the hard southwest monsoon in the Indian Ocean, when the big dhows are laid up and there is no ocean sailing. It is therefore possible for the same men to carry on both callings, though in these days the seaman is becoming a little too enlightened to go off cheerfully to the purgatory of pearling.

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debts, odd earnings not shared and even odder earnings which were shared, and mysterious complicated procedures, some of which I never did fathom, for the war came, and stopped my investigations.

K MA [595]

The son of the merchant family which owned our dhow, however, told me that her gross profit on the nine-month round voyage was 11,000 rupees, not including the proceeds of the crews' and officers' private ventures. But I think he exaggerated, for the total investment in the dhow was little more than that. But at any rate, the dhow's people were well satisfied and they all, save one, went back to sea with her. The *nakhoda* grew fat throughout the summer, and took a new wife, and a new *boom* for his brother at a cost of 10,500 rupees; and I heard no complaints from the merchants.

K MA 505 465 501 439

As far as I was able to discover, half the gross earnings went to the ship; this was the merchant's share. The cost of the food for the round voyage (which was not much, for all hands lived very simply and fishing lines were the most important equipment in what passed for her storeroom) was deducted from the other half, and the remainder was then divided by shares arranged strictly in accordance with the accepted value of each man's rating aboard. The sailor's share on the voyage which I made was reported to be 135 rupees (about $40), whereof 35 rupees had been advanced. This was little enough for such a long voyage, and though they worked hard at all sorts of things and were ready for any kind of business, I doubt whether a sailor's earnings from other sources amounted to more than 20 or 30 rupees, clear.

K MA 465 505 181

I heard of dhows from Kuwait that season which were distributing less than 100 rupees; according to the Kuwaiti, who had no high opinion of them, the Suri rarely paid out more than fifty. To a sailor whose only home was the sand of the *suq* and his bed the cloak around him, whose wants were few and whose paradise was assured, even 50 rupees may be a vast sum of money. There was, at any rate, contentment throughout the Arab shipping industry as I knew it, and the quiet philosophy I learned among the simple seamen was of great help to me in the days of the long-drawn war which was soon to follow.

565 not have the position of authority which they
369 occupy in the village. The patriarchal order with
[64] its inflexible, all-pervasive family organization which prevails in the rural settlement does not exist in the town. Urban conditions, the capitalistic economy, industry and the social differentiation are progressively impinging upon and disintegrating the predominance of the family; moreover, these factors actually tend to break up the families themselves in the Arab town. It is certain that in the course of time differentiation and disintegration will gain momentum, the authority of the families weaken, the monotony of the upper class in town lessen and give way to changes. Nevertheless, the important families still exist and their influence is still immense. While their practical control over the economic life, agriculture and industry, has perceptibly shrunk, the social order which is more conservative mirrors these socio-economic changes only after a lapse of time. From the social point of view the power of the families is therefore still considerable, and as a consequence they can assert their rule within the realm of public-political activities. This predominance of the prominent families is reflected in every listing of municipal councillors, founders of companies, lawyers, members of government committees, invited guests to banquets, recipients of decorations and imperial honors, high officials, heads of political parties, clubs and associations, owners of newspapers and important journalists and the like.

It is noteworthy that among the Christian Arabs the leading families occupy a less domin-

It was in the Red Sea that an American ship was plundered in the early 721 nineteenth century; however, the pirates came from the South Arabian coast. This has been described by Osgood:

> Conspicuous among the former rulers of Dhafar was Seyed Mohammad Akil, who . . . was led by ambition and avarice to turn pirate. Among other prizes, in June 1806, he captured, plundered, and burned near the harbor of Hodeida, in the Red Sea, the American ship *Essex*, belonging to Salem, and commanded by Joseph Orne. Captain Orne had arrived in the *Essex* at Mocha with sixty thousand dollars to purchase coffee. He was persuaded to sail from Mocha for Hodeida by Mohammad Akil, who, keeping him company in an armed ship, seized the vessel soon after leaving Mocha, and slaughtered all on board except a Dutch boy named John Herman Poll, whom he carried to Dhafar. The young man was kept in servitude, educated as a Mahometan, married and had several children, and when last visited, within a few years, seemed perfectly contented with his lot, having nearly forgotten his mother tongue.[42]

While the Red Sea is now perfectly safe from such attacks, many areas of the long Arabian littoral in the Arabian Sea and the Persian Gulf are definitely not. O'Shea[43] relates that in the Persian Gulf as late as 1944 a large Arab dhow bound for the Trucial Coast of Oman with foodstuffs was attacked by a Persian dhow and the whole Arab crew murdered. Representations were made to the Iran government by the Political Agent of Trucial Oman; the pirates were supposedly apprehended and hanged by the Iran government.

Around the Kuria Muria Islands off the South Arabian coast, the coastal 721 tribes are very piratical. Villiers[44] relates that in recent times the tribes on 619 the Arabian coast near these islands have been known to seize ships at night, plunder the cargo, burn the ship and sell the crew in the interior. They have also been known to cut moorings at night, thereby allowing the ship to drift onto the rocks; then they salvage the cargo. This is apparently nothing new, for when Bent sailed along these coasts in the late 1890's, he noted the extreme suspicion of dhow sailors for the inhabitants of the coast:

> While at anchor we heard shouts and cries to come to land, but our sailors would do nothing of the sort. They said a single man might often be seen calling that he was wrecked, and asking to be fetched away, but a party of armed men would be behind a rock, and come out and murder the benevolent crew and steal the boat.[45]

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[42] Osgood, *Notes of Travel* (Salem, 1854), pp. 119-120.

[43] R. O'Shea, *The Sand Kings of Oman* (London: Methuen and Company, 1947), p. 116.

[44] A. Villiers, *SS*, pp. 292-293.

[45] T. Bent, *Southern Arabia* (London: Smith Elder and Co., 1900), p. 279.

721 Parts of this coast are as dangerous for Europeans as for Arabs, and in
619 some instances more so for Europeans. Even as late as December 1949 on the supposedly peaceful coast of the Aden Protectorate an act of violence occurred against a British-owned yacht. I talked to the survivors several months later in Mukalla. They related how the 110-foot motor launch *Anne Loretta* with an Englishman, his wife, and one Arab crewman was cruising a little off shore when she touched a sand bar. The captain went ashore to lay out a stern anchor and was seized by the Arabs of the local Ardiab tribe on the coast; then his wife and the Arab went ashore to see what had happened and were likewise seized. Several British officials to whom I talked admitted that these two English people came very close to death in the hands of these unpacified coastal inhabitants. The British explanation was that the area was between the Eastern and Western Aden Protectorates where the tribes had not been pacified, and the yacht should never have landed there.

IV

505 Every Arab dhow of ocean-going tonnage has a captain *(nakhoda)*, a mate, three quartermasters (or helmsmen), a boatswain, and perhaps a boatswain's mate in addition to the crew. The total complement on a 100-ton ship may be from twenty to twenty-five men, while on a 200-ton ship there will be from thirty-five to forty men. The small coasters of up to 50 tons have crews up to eight or ten; there are no officials on these
[291] small craft outside of the *nakhoda*. There is no formal dress on a dhow; often it is difficult to tell the *nakhoda* from the crew, as everyone usually wears simply a loin cloth or the long Arab gown and a head cloth.

A *nakhoda* is much more than the word 'captain' implies; he acts as navigator, pilot, shipwright, sailmaker, ropemaker, agent for buying and selling cargo, agent for freight, agent for recruiting passengers, cashier, bookkeeper, judge, and arbitrator. So completely does the *nakhoda* handle the ship and the ship's affairs that the mate has little to do when the *nakhoda* is aboard. Only when the *nakhoda* leaves the ship does the mate take over; that is the mate's only excuse for existence.

505 Many of the Kuwait ships on the run to Africa carry carpenters aboard
396 —not as ship's carpenters, but for the construction of small dhows for sale in African waters. Presumably they can sell them profitably in Africa at a price cheaper than the local boatbuilders! However, a small 10-ton dhow that was built aboard the Kuwait *bhum* on which Villiers sailed down the African coast, had to be left on the beach at Zanzibar in charge of a ship's agent, because the dhow could not be sold at the price de-

425 wanderings etc., forced many villages to seek
621 the protection of a regional potentate, such as
a Bedouin shaykh, pasha, high government official,
wealthy urbanite etc. In the course of
time the land under protection, which had remained
the de facto possession of the fellahin,
became the de jure private property of the protector.
426 B) A second method (leading to the
emergence of big estates) -- principally pursued
in the vicinity of the valleys -- was for the
rich to occupy uninhabited areas and obtain government
sanction of their ownership in return
for the obligation to populate these tracts of
land. Sometimes they actually settled people on
the acquired territory and founded new villages,
426 sometimes they did nothing of the kind. C) A
425 third very common way (of amassing big holdings)
651 was the passage of many plots of land from
the fellahin into the possession of effendis as the
result of insolvency. Fellahin encumbered with
debt burdens were forced to surrender the titles
of their lands to creditors, they themselves remaining
on the estates as tenants. To these
commercial debts must be added the arrears in
tax payments. In the Ottoman Empire the collection
of taxes was ceded to tax-farmers who
paid the treasury a fixed sum of money and collected
the taxes at their expense and discretion.
It was natural that these tax-farmers should
belong to the class of the rich and powerful. It
often happened that a fellah who defaulted in
paying his assessments to the fiscal contractor
was finally compelled to transfer his land to
423 him. D) There was one more way: during the
425 second half of the nineteenth century the Turk-

their graves, and justly, too, for diving probably hastened their 228
end. The Government demands that account books be given each 656
diver and that they be kept up properly, and sends inspectors to 426
see that they are. Before the season begins at Bahrein the amount
of cash advances is agreed upon and proclaimed. The divers have
put up a terrific objection to this limitation, for it seemed to them
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that their debt was being lowered—in fact they did not
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There is a "diving court" which enforces the arbitrary laws 228
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There has never been any noticeable effort on the part of the 651
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farmer, fisherman, or herder there would be little incentive to
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have an eight months' loaf during which time they live off
their *nakhoda;* this is to the liking of both the diver and the
nakhoda.

However, many divers do find other work, as fishermen or 463
mariners. The depression of the thirties hit the Persian Gulf 464
pearl industry with great suddenness. Within a short period tens 505
of thousands of pearlers in the Gulf found themselves without
an occupation. The marine stock of Kuwait rose to the situation
and gradually shifted to cargo hauling between Kuwait and
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seamanship throughout the Middle East, sailing to Africa on
one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

228 continued decline cannot be laid at its door. Japanese cultured
439 pearls first started to appear on the market in quantities in the
435 twenties just before the depression. As time has gone on the competition they offered has tended to become less and less, but on the other hand, the world demand for this gem has reached an all-time low, mainly because of the effect of the cultured pearl.

228 The introduction of cultured pearls and artificial pearls alike
435 has had far-reaching effects on the natural pearl market. While they do not compete insofar as price is concerned when they are recognized as cultured, it takes an expert to distinguish them. Thus, the net effect of cultured pearls, and even more so of the expertly fabricated synthetic pearls, has been to cheapen the pearl as a precious gem in the eyes of those who wear them. There are actually some women who prefer cultured pearls, which are usually more uniform. As a result, natural Gulf pearls do not bring a tenth of what they did a quarter of a century ago at Bahrein.[*]

228 It is a strange fact that even though a cultured pearl is worth only a few percent of the value of real pearls, there are few pearl merchants in the Persian Gulf who can tell a good cultured pearl from the Gulf pearl without destroying the two in the effort.[*] Radiography (x-ray), x-ray diffraction, fluorescence under x-ray radiation, or specific gravity determinations, alone or in various combinations, may be used to detect cultured pearls, but these physical tests are not used by the Arabs for obvious reasons.

228 One might ask why cultured pearls have not been "introduced"
654 into the Persian Gulf pearl market by divers, captains, or merchants. The Arab will tell you that this is improbable. The importation of cultured pearls into the Persian Gulf is prohibited, and in fact carries a severe penalty. The oysters are opened in sight of the divers, so they all know how many exceptional pearls the *nakhoda* (captain) receives and thus what exceptional pearls

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[*] One of the world's leading authorities on the differentiation of cultured and natural pearls by their physical properties, Dr. A. E. Alexander, visited the Persian Gulf in 1947 to study the pearl fisheries and took with him a number of fine cultured pearls which he showed to a group of about thirty Bahrein pearl dealers. These Arabs had never seen a cultured pearl, whose importation is normally prohibited, and were astounded at its quality.

the owner in turn receives. Such fraud as the introduction of 228
cultured pearls, if detected, would bring out the headman's ax, 656
for Arab laws are severe in this respect. But as there are always people willing to make a dishonest dollar or rupee—and the Arabs are certainly no exception—it is inconceivable that cultured pearls, carefully chosen for their similarity to Gulf pearls, have not at times been smuggled into the Persian Gulf. If the Arab merchants cannot detect them, there are probably few experts who could without the aid of delicate and elaborate electrical instruments.

OYSTERS AND OYSTER BEDS

Arab lore in the Gulf relates that the young shell-less oysters 825
come to the surface when it is raining, or when the moon is full. The raindrop is the father of a good pearl and the oyster the mother, while the moon produces luster. A poor season is attributed by many to a shortage of rain. Al-Qazwini, author of *The Wonders of Creation,* gives a different version: the north wind carries a mist containing a viscid substance similar to mercury from the Caspian Sea to the Gulf; the oysters draw in this substance, a large drop forming a large pearl.[*] But every Arab has his own explanation of the phenomenon, and believes that the true scientific explanation is just fantasy.

According to O'Shea, three types of pearl oysters are found in 228
the Persian Gulf, known to the Arabs as *mahharah, zanniyah,* and *sadaifiyah.* The *mahharah* are the commonest, growing to two or three inches in diameter, and producing 98 percent of the pearls found in the Gulf. The *sadaifiyah* is a rare find and seldom yields pearls; it grows to great size (six to eight inches in diameter) and is often collected for its mother-of-pearl. The *zanniyah* is found in the vicinity of the Ras al-Khaymah in Oman; no details of this oyster are given. In the Red Sea two varieties are commonly found: the large oyster, known as the *balbil,* and the small, known as the *sadaf.* The pearl itself is known as *lulu* to the Arabs in the Persian Gulf, irrespective of the species of oyster from which it comes, while the Persians know it as

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[*] A. Rihani, *op. cit.,* p. 277.

DIVING TECHNIQUE

The rights to the Persian Gulf pearl fisheries are jealously 228
guarded by the Arabs, and these rights have been backed up by 656
the British Government for over a hundred years. They are 685
limited to the inhabitants of the Gulf littoral—Arabs and Iranians. Pearl diving in the Persian Gulf is carried on without the use of any professional diving gear; it is "skin diving." The British have prohibited drags, dredges, and compressed air diving suits or helmets, and there is a 30,000 rupee ($9,000) fine for violation of the law.

However, in spite of this protection, foreigners have dived for pearls in the Gulf, and diving equipment has been used. In 1882 a Bombay syndicate sent a steamer, the *Johnstone Castle,* without official permission to the Bahrein banks. After five days the vessel was arrested by a British gunboat; its yield had been only 23 seed pearls.[21] During the pearling season of 1935 some Italians employed by the Qusaibi Brothers, wealthy merchants of Hofuf, Saudi Arabia, used deep-sea diving suits.[22] Presumably these merchants figured themselves exempt from British proclamations, inasmuch as they were Arabian nationals. But nothing more was ever heard of the venture, so it was either not a financial success or else the British brought pressure to bear against the practice. The Arab customs officials of both Saudi Arabia and Bahrein Island have been extremely suspicious of oil company divers, who spend a lot of time under water inspecting pipelines and piers, and they used to watch them through field glasses to see that they never brought up any oysters.

The maximum depth at which the divers work is about 12 fathoms.[23] 228 Sweeps are left projecting overboard athwartships and are lashed to the tholepins and the deck. The divers' lines pass over the sweeps so that they will not become fouled. To get to the bottom a diver puts his foot in a loop of rope tied to a stone or iron weight, releases a slip knot holding the rope to the sweep, and holding onto the rope plummets down. The attendant pulls up the stone as soon as he feels it hit bottom. The diver holds onto

[21] R. O'Shea, *op. cit.*, pp. 140–41.

[22] K. S. Twitchell, *Saudi Arabia* (Princeton, N. J., 1947), p. 26.

[23] A. Villiers, *op. cit.*, p. 374; Hugh Smith, "The Pearl Fisheries of Ceylon," *National Geographic Magazine*, 33 (1912), p. 174; R. O'Shea, *op. cit.*, p. 137.

ECONOMIC RELATIONSHIPS

228 426 Pearling is a great gamble for everyone concerned. A share may be worth only 50 or 100 rupees if the take has been poor, but on the average a share should net at least several hundred rupees. It must be remembered that a share usually represents a year's earning, since the pearling industry operates on the "debt system." This is not to be confused with the "truck system," for the workers in the Persian Gulf pearl fisheries are not paid in produce. In the debt system the divers and tenders get actual cash advances during the seasons they are out of work, and their families get food and supplies while they dive. They must pay off their incurred debts with their earnings after the pearling season, but somehow they never seem able to get free.

228 426 672 Until recently, a diver who accepted cash advances from a *nakhoda* had doomed himself to diving until death, and unfortunately death might not be an exit, as his debt was simply passed on to his son or brother, who then went on to incur his own debt. Once in debt a diver is prohibited from hiring to another *nakhoda*—he must repay his debt to the man who gave him cash advances. A diver or anyone else who accepts an advance in the pearling industry has sold himself to economic slavery, for the *nakhoda* owns his ability to work, while the man must support himself. Thus, a diver is bound to return to the purgatory of pearling at the *nakhoda's* call. Since Muslim law prohibits interest or usury the debt system effectively gets around this. The *nakhoda* is usually in turn bound to some merchant in the same way, for he has taken cash advances to give to his divers and attendants.

567 465 In Oman the *nakhodas* often hire their labor from a tribal agent, giving the agent an advance of money and rice. In the case of slaves, the agent takes this to the slaves' master; at the end of the season he collects the balance of the slaves' earnings. Thus the slaves' earnings go completely to his master, who in return clothes and feeds him.

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228 However, there has been a drastic change in the Persian Gulf pearling industry. The great depression after World War I and the competition from Japanese cultured pearls dealt the pearl fisheries a serious blow. Twenty-five years ago there were nearly three thousand dhows engaged in pearling in the Persian Gulf; today there are not more than six hundred. In the twenties the east-coast ports of Saudi Arabia probably sent several hundred boats to the pearl fisheries annually; today there are not more than several dozen. In the twenties the value of the Persian Gulf pearl fisheries was more than a million dollars; today it is less than a quarter of a million.

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464 numerous pearlers found employment on sailing ships traveling to India
and Africa. On Bahrein Island many were absorbed by the rapidly expanding oil industry. In Saudi Arabia oil development came late, and the unemployed pearlers had already been absorbed as fishermen, rock miners, and farmers; in fact, so well adjusted were the Saudi Arabian towns that when the Arabian American Oil Company needed large amounts of labor in 1945, it had to hire Bedouins from the desert. Oil came late to Kuweit also; however, here workers were drawn from the marine industries, since the Kuweit Oil Company paid higher wages than the workers could get as sailors, pearlers, or fishermen.

Oil has thus been able to offer salvation to the lowly coastal worker of the Persian Gulf. A man in debt can now get a job with an oil company and pay off his debt. So effective has this proved that the Kuweit, Bahrein, and Saudi Arabian nakhodas have difficulty in getting men to send to the pearl fisheries, or to man the sailing ships going to India and Africa. However, oil has yet to come to Oman, so that pearlers still leave the Trucial Coast in large numbers, and many Oman dhows from Sur still sail down to Africa.

567 158 or threat seemed to stir him. They are exceedingly superstitious, too, and are frequently visited by a familiar spirit, who takes complete possession of the individual. The Arabs on the Pirate Coast are not especially superstitious. They are Sunni Mohammedans, and that sort of faith does not readily lend itself to superstition. However, when one of these negro slaves starts up as if suddenly crazed, and runs around shouting and gesticulating and talking earnestly in a changed voice as if a new personality had possessed him, even the hard Arab masters are a good deal awed and hesitate to inflict the punishment they had planned. These visitations may come at the most opportune times, and it takes more hardihood than the Arab usually possesses to disregard such a warning. I have had such a slave jump suddenly from the operating table when all preparations were complete and I had the knife in my hand to begin an operation for the removal of a tumor from his neck. The operation was to be done under local anesthesia, so the patient was fully conscious. We were thankful that he did not wait till ten minutes later when the operation would have been well under way. These slaves are not shamming in any ordinary sense. They thoroughly believe in the genuineness of such manifestations. They do not thus escape every whipping, but these visitations undoubtedly do protect them from a certain number of terrible punishments at the hands of their Arab masters.

565 664 In these diving communities the actual control even of the civil powers rests in the hands of the diving captains and the pearl merchants. The town of Ras el Kheima has a number of divers who regularly dive in boats the captains of which live in Dibai and Sharja. During one winter war of a small sort broke out between

MaritimeArabs MK2.

the Sheikh of Ras el Kheima and some of the inland 565 tribes of that district, and this fighting was pushed quite 664 vigorously, the city being more or less in a state of siege. It was not difficult to hold the port itself against attack, but as the fighting continued, the diving season came on. The merchants of Sharja and Dibai then sent representatives to settle the matter, for their divers were being held in the city for its defense and had not reported for diving. The Sheikh was far from willing to make peace, but eventually the pressure of these men of money was too much for him, and he was compelled to settle with the tribesmen so his subjects could go out and work for the men whose debtors they were.

Conditions in a diving community are not pleasant to 000 see. They seem the more pitiful because they are so unnecessary. Why should not any dozen men who are out of debt, or a dozen beginners, club together, borrow the capital for the season's supplies, or better, save their money for a season or two and then have the capital sufficient for the enterprise? One-half of an ordinary year's profits would probably meet all expenses and another half season's profits would buy the boat that carries the men. The pearl banks are free, the markets are free. It would be easy to purchase supplies at the same price that every one else pays. The proceeds of such a group would be subject to the same element of chance as every pearl diver's but in any case should be at least twice those they receive at present, inasmuch as the captain's and the pearl merchant's extortions would be avoided. Any dozen divers might do it. The skill required is most moderate and the necessary capital within easy reach.

As a matter of fact the experiment is occasionally tried, but I never knew it to last through more than one

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DIVING TECHNIQUE

The rights to the Persian Gulf pearl fisheries are jealously guarded by the Arabs, and these rights have been backed up by the British Government for over a hundred years. They are limited to the inhabitants of the Gulf littoral—Arabs and Iranians. Pearl diving in the Persian Gulf is carried on without the use of any professional diving gear; it is "skin diving." The British have prohibited drags, dredges, and compressed air diving suits or helmets, and there is a 30,000 rupee ($9,000) fine for violation of the law. 228 656 685

However, in spite of this protection, foreigners have dived for pearls in the Gulf, and diving equipment has been used. In 1882 a Bombay syndicate sent a steamer, the *Johnstone Castle,* without official permission to the Bahrein banks. After five days the vessel was arrested by a British gunboat; its yield had been only 23 seed pearls.[21] During the pearling season of 1935 some Italians employed by the Qusaibi Brothers, wealthy merchants of Hofuf, Saudi Arabia, used deep-sea diving suits.[22] Presumably these merchants figured themselves exempt from British proclamations, inasmuch as they were Arabian nationals. But nothing more was ever heard of the venture, so it was either not a financial success or else the British brought pressure to bear against the practice. The Arab customs officials of both Saudi Arabia and Bahrein Island have been extremely suspicious of oil company divers, who spend a lot of time under water inspecting pipelines and piers, and they used to watch them through field glasses to see that they never brought up any oysters.

The maximum depth at which the divers work is about 12 fathoms.[23] 228 Sweeps are left projecting overboard athwartships and are lashed to the tholepins and the deck. The divers' lines pass over the sweeps so that they will not become fouled. To get to the bottom a diver puts his foot in a loop of rope tied to a stone or iron weight, releases a slip knot holding the rope to the sweep, and holding onto the rope plummets down. The attendant pulls up the stone as soon as he feels it hit bottom. The diver holds onto

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[21] R. O'Shea, *op. cit.*, pp. 140–41.

[22] K. S. Twitchell, *Saudi Arabia* (Princeton, N. J., 1947), p. 26.

[23] A. Villiers, *op. cit.*, p. 374; Hugh Smith, "The Pearl Fisheries of Ceylon," *National Geographic Magazine*, 33 (1912), p. 174; R. O'Shea, *op. cit.*, p. 137.

their graves, and justly, too, for diving probably hastened their 228
end. The Government demands that account books be given each 656
diver and that they be kept up properly, and sends inspectors to 426
see that they are. Before the season begins at Bahrein the amount of cash advances is agreed upon and proclaimed. The divers have put up a terrific objection to this limitation, for it seemed to them that they were simply getting less money. They could not understand that their debt was being lowered—in fact they did not care, for hadn't they always been in debt?

There is a "diving court" which enforces the arbitrary laws 228
of the industry, such as those dealing with engagement of labor, 678
taxes, spurious pearls, etc. The court also disposes of any case of 686
a *nakhoda* who cannot pay off his debts; the *nakhoda* may lose his boat and divers, but not his personal property.

There has never been any noticeable effort on the part of the 651
ruling sheikhs to better the lot of their subjects: if they were un- 464
employed for long periods in the winter they would be sure to 461
work harder during the pearling season to pay off their winter's
debts. As the local sheikhs levy a tax on every boat and get a cut 426
of some sort on the proceeds, the pearlers in a sense work for them. The sheikh thus always looked on the lack of other employment with favor, for if a man were happily employed as a farmer, fisherman, or herder there would be little incentive to enter the pearling purgatory. Under normal conditions the divers have an eight months' loaf during which time they live off their *nakhoda;* this is to the liking of both the diver and the *nakhoda.*

However, many divers do find other work, as fishermen or 463
mariners. The depression of the thirties hit the Persian Gulf 464
pearl industry with great suddenness. Within a short period tens 505
of thousands of pearlers in the Gulf found themselves without an occupation. The marine stock of Kuwait rose to the situation and gradually shifted to cargo hauling between Kuwait and
Basra, Iran, India, South Arabia, and East Africa. Large ocean- [501]
going double-ended dhows have carried the fame of Kuwait seamanship throughout the Middle East, sailing to Africa on
one monsoon and back on another. Kuwait oil operations have 464
been drawing on this labor supply as well, so that nowadays the

226 wave action, completely leveled almost all the 10 fishweirs on the Tarut
Bay side of the Ras Tanura peninsula. All during the fishing season constant
maintenance is necessary (Fig. 13).

Because of its shoal water, Tarut Bay is the only place along the Persian
226 Gulf coast of Arabia where large fishweirs can be built, and one of the best
133 weir locations in Tarut Bay is off the Ras Tanura peninsula. Things went
315 peacefully among the weir tenders and owners until 1945, when the Saudi
503 Arabian refinery project started in high gear. A deepwater oil-loading pier
was built on the Gulf side of the end of the peninsula, and a huge pipeway
was run from this pier to the refinery, some eight miles away. The pipeway
passed close to several of the Tarut Bay fishweirs, and the considerable fill
dumped into the bay changed the shore contour slightly

315 The Arab fishweir owners, ever alert to monetary opportunity, brought
suits against the Arabian American Oil Company, asserting that the change
● 691 in contour had reduced their fish catches and that the company's grading
226 equipment had damaged some of their weirs. After the refinery was partly
424 completed in October, 1945, oil was occasionally spilled into Tarut Bay and
provided another complaint for the Arabs, who said that the oil contaminated their weirs. These complaints were such an annoyance to the oil-company executives that they instructed their agents to buy the fishweir
[435] rights. By 1947 only three of the original 10 weirs were left; the total price
paid was about 72,000 Saudi riyals ($22,000). This money enriched the few
Arabs who held the rights to the weirs, but to the Arabs in the Qatif Ras
Tanura area the sale was an economic blow, for much of the fish supplied to
Hasa Province came from the Ras Tanura traps.

ROCK MINING

228 Another marine occupation is the "mining" of dead coral rock. Two types of coral are mined: *faroush* and *hasa*. Faroush is found on flat bottoms in level layers three to six inches thick. Four-man diving crews, operating from shallow-draft dhows[2] 30 to 45 feet long, pry a huge slab loose with iron bars or by simply lifting its edge. A rope is thrown around the slab, and it is hauled to the dhow, where it is broken up into easily handled pieces (Fig. 14). Diving for faroush can be relatively dangerous: I saw a diver with

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113 [2] For a description of the dhows used in the marine industries of eastern Arabia see R. LeB. Bowen,
501 Jr.: Arab Dhows of Eastern Arabia, *Amer. Neptune*, Vol. 9, 1949, pp. 87–132. The dhows are usually *jalbuts* (see Fig. 3 of the present article), but Bahrein and Kuweit send many *bums* and *sambuks* to the pearl fisheries in addition to the jalbuts. A few small *shewes* and *ballams* are also used by the fishermen (see Fig. 4 of the present article).

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501 sometimes it is too late, for it may have already gone overboard. The Arab usually has no lines ready when he comes into a mooring and he may just as often throw a loose anchor over as not.

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502 Dhows never show lights of any kind at night, whether under way or anchored. Although British regulations have forced many dhows from various ports on the Indian Ocean to carry lights, there is unfortunately no way of forcing the Arabs to use them. This undoubtedly results from centuries of travel in pirate-infested waters, where a light at night served only as a signal for sudden attack from pirates. There is only a weak light in the binnacle with which to see the course; everything else is dark. Not even when in the sea lanes off South Arabia, in the Persian Gulf, or in the Red Sea, where freighters and tankers beat a constant path, does the dhow show a light. In case of collision at night, the boat that can prove that it showed lights has a legal edge.

At the West Pier at Ras Tanura on the Persian Gulf, there is often considerable movement of Arab dhows and Arab *lanchs* (kerosene-driven native launches). Dhows slip in and out of their mooring like shadows on nights so black that a dirty white sail could not be seen ten feet away. One night a *lanch*, all of which carry lights, hit a rock-laden dhow amidship and in a matter of seconds sent her to the bottom in forty feet of water. Native divers unloaded her, and she was eventually salvaged. Since then, dhows make a frantic attempt to fan their coffee fires up to a bright glow when they see any *lanch* lights approaching, but they still do not carry standard lights. It is an eerie sight to see the glow of a charcoal fire suddenly light up a large lateen sail directly in your path!

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721 When sailing along their own coasts, the Arabs like to sail in two's and three's. This arises from the fact that piracy is by no means a thing of the past. For centuries piracy and robbery were honorable professions among many tribes along the long Arabian littoral; such a reputation did the piratical Omani have during the last half of the last century that the very sight of their characteristic *bedans* and *batils* brought actual fear to the population of Zanzibar.[40] Niebuhr noted dangerous conditions in the Red Sea two centuries ago:

> Although from pirates properly so called, there is little to be feared in the Arabic gulfh [Red Sea], yet, so unskilled are the mariners in these latitudes, that they dare not venture to any distance from the coasts. This timorous mode of sailing might expose a single vessel to the robbery of the Arabs; to avoid which, these ships sail in little fleets; four always setting out together, that they may join to defend themselves.[41]

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[40] G. L. Sulivan, *Dhow Chasing* (London, 1873), p. 102.

[41] C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 212.

It was in the Red Sea that an American ship was plundered in the early nineteenth century; however, the pirates came from the South Arabian coast. This has been described by Osgood: 721

> Conspicuous among the former rulers of Dhafar was Seyed Mohammad Akil, who . . . was led by ambition and avarice to turn pirate. Among other prizes, in June 1806, he captured, plundered, and burned near the harbor of Hodeida, in the Red Sea, the American ship *Essex*, belonging to Salem, and commanded by Joseph Orne. Captain Orne had arrived in the *Essex* at Mocha with sixty thousand dollars to purchase coffee. He was persuaded to sail from Mocha for Hodeida by Mohammad Akil, who, keeping him company in an armed ship, seized the vessel soon after leaving Mocha, and slaughtered all on board except a Dutch boy named John Herman Poll, whom he carried to Dhafar. The young man was kept in servitude, educated as a Mahometan, married and had several children, and when last visited, within a few years, seemed perfectly contented with his lot, having nearly forgotten his mother tongue.[42]

While the Red Sea is now perfectly safe from such attacks, many areas of the long Arabian littoral in the Arabian Sea and the Persian Gulf are definitely not. O'Shea[43] relates that in the Persian Gulf as late as 1944 a large Arab dhow bound for the Trucial Coast of Oman with foodstuffs was attacked by a Persian dhow and the whole Arab crew murdered. Representations were made to the Iran government by the Political Agent of Trucial Oman; the pirates were supposedly apprehended and hanged by the Iran government.

Around the Kuria Muria Islands off the South Arabian coast, the coastal tribes are very piratical. Villiers[44] relates that in recent times the tribes on the Arabian coast near these islands have been known to seize ships at night, plunder the cargo, burn the ship and sell the crew in the interior. They have also been known to cut moorings at night, thereby allowing the ship to drift onto the rocks; then they salvage the cargo. This is apparently nothing new, for when Bent sailed along these coasts in the late 1890's, he noted the extreme suspicion of dhow sailors for the inhabitants of the coast: 721 619

> While at anchor we heard shouts and cries to come to land, but our sailors would do nothing of the sort. They said a single man might often be seen calling that he was wrecked, and asking to be fetched away, but a party of armed men would be behind a rock, and come out and murder the benevolent crew and steal the boat.[45]

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[42] Osgood, *Notes of Travel* (Salem, 1854), pp. 119-120.

[43] R. O'Shea, *The Sand Kings of Oman* (London: Methuen and Company, 1947), p. 116.

[44] A. Villiers, *SS*, pp. 292-293.

[45] T. Bent, *Southern Arabia* (London: Smith Elder and Co., 1900), p. 279.

721 619 Parts of this coast are as dangerous for Europeans as for Arabs, and in some instances more so for Europeans. Even as late as December 1949 on the supposedly peaceful coast of the Aden Protectorate an act of violence occurred against a British-owned yacht. I talked to the survivors several months later in Mukalla. They related how the 110-foot motor launch *Anne Loretta* with an Englishman, his wife, and one Arab crewman was cruising a little off shore when she touched a sand bar. The captain went ashore to lay out a stern anchor and was seized by the Arabs of the local Ardiab tribe on the coast; then his wife and the Arab went ashore to see what had happened and were likewise seized. Several British officials to whom I talked admitted that these two English people came very close to death in the hands of these unpacified coastal inhabitants. The British explanation was that the area was between the Eastern and Western Aden Protectorates where the tribes had not been pacified, and the yacht should never have landed there.

IV

505 Every Arab dhow of ocean-going tonnage has a captain *(nakhoda)*, a mate, three quartermasters (or helmsmen), a boatswain, and perhaps a boatswain's mate in addition to the crew. The total complement on a 100-ton ship may be from twenty to twenty-five men, while on a 200-ton ship there will be from thirty-five to forty men. The small coasters of up to 50 tons have crews up to eight or ten; there are no officials on these [291] small craft outside of the *nakhoda*. There is no formal dress on a dhow; often it is difficult to tell the *nakhoda* from the crew, as everyone usually wears simply a loin cloth or the long Arab gown and a head cloth.

A *nakhoda* is much more than the word 'captain' implies; he acts as navigator, pilot, shipwright, sailmaker, ropemaker, agent for buying and selling cargo, agent for freight, agent for recruiting passengers, cashier, bookkeeper, judge, and arbitrator. So completely does the *nakhoda* handle the ship and the ship's affairs that the mate has little to do when the *nakhoda* is aboard. Only when the *nakhoda* leaves the ship does the mate take over; that is the mate's only excuse for existence.

505 396 Many of the Kuwait ships on the run to Africa carry carpenters aboard —not as ship's carpenters, but for the construction of small dhows for sale in African waters. Presumably they can sell them profitably in Africa at a price cheaper than the local boatbuilders! However, a small 10-ton dhow that was built aboard the Kuwait *bhum* on which Villiers sailed down the African coast, had to be left on the beach at Zanzibar in charge of a ship's agent, because the dhow could not be sold at the price de-

The larger ports of Kuwait, Bahrein and Dibai have also a large community 460 of artisans and lesser merchants. These serve not simply 441 the local diving population, but also act as manufacturers 439 and wholesalers for the whole of Central Arabia. Practically the entire import and export trade for the interior of the peninsula goes through these three towns, and the merchant and artisan communities are large and prosperous.

It is difficult to be optimistic about the general situa- 735 tion in these pearl-diving communities. The actual ma- 511 terial condition of the divers is bad enough, but worse 454 by far is the discouragement and despair that have set- 426 tled down upon the whole community. No one tries very hard to get out of debt, for he knows that barring some unforeseen miracle, he cannot do so no matter how long and hard he works and how economically he lives. There is little thrift; a stranger is often shocked by the waste that divers show in their personal and household expenditures. There is not the slightest effort, for instance, to discover what sort of clothing will give the most service for the money invested. Expensive or cheap, economical or wasteful, it is all the same. With luck when the present supply of money is gone, the captain will make another liberal allowance, and nothing better than that can be hoped for, no matter what economy and thrift are practised.

The conditions outlined above are those that obtain in the northern towns, chiefly in Bahrein. There is a sec- 721 ond large diving community in the region known as the Pirate Coast, whose capital and largest city is Dibai. Its piratical character is a matter of history now long past, but it still makes a good deal of trouble for the British who police the Gulf and maintain order along the coast.

721 Political troubles became acute some ten years ago or more, and for many years no foreigner was allowed to land on that coast. It was a double pleasure, then, to be invited to visit that part of Arabia four years ago. It[1] 567 is the one remaining nest of slavery in eastern Arabia and the district is still troublesome at times to the bearers of constituted authority, but nothing of that sort is apparent to the visiting doctor. 576 The rich and the poor alike are most courteous and pleasant hosts.

228 461 In this district[1] the pearl-diving system is the same as in Bahrein, but the men do not work nearly so hard. They set out to work later in the season, although if the temperature of the water were the only element in their decision, they might be at work sooner, for they lie farther to the south and their water warms up considerably before that near Bahrein. They return to the shore oftener and show much less energy in their work. The pearl banks in the region of the Pirate Coast are less rich than the Bahrein banks, and as might be expected, their catch is much less valuable than that of the boats farther north. 511 It is interesting to see that divers on the Pirate Coast live at about the same general level as those in Bahrein. They could not live at a much lower level, for it would mean starvation. The larger receipts in the Bahrein area have as their only result the creation of a much richer class of pearl merchants than the similar class on the Pirate Coast.

567 464 461 Unquestionably it is the slaves who have reduced the standards of what a day's and a season's work ought to be to its present level on the Pirate Coast. Most of these slaves are negroes from Africa. A few are Baluchs from the Makran coast between India and Persia. They do not number over one-half the divers, probably far

[1][The Pirate Coast and its capital at Dibai --Analyst]

5; Harrison D-4 (1912-1924) 1924 M1 Middle East
Maritime Arabs MKa

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511 be explained without reference to the Jewish enterprise in the country. It is, however, undeniable that to a considerable extent Jewish endeavors in Palestine are correlated with the increase of the Arab population, the rise in its living standard
511 and the improvement of its health. One must not
● 744/ ignore the direct contribution of Jewish health services and physicians to the physical well-being of the Arabs in the country. (It is noteworthy that practically none of the Arab doctors is a rural resident. The Arab village community is entirely dependent on government health services or on physicians and medical facilities in the Jewish
[467] settlements.) Hundreds of Arabs enrolled in the Palestine Labor League are members of the Histadrut-operated Workers' Sick Fund. For a nominal fee many Arab villagers receive medical aid in the clinics of the Jewish settlements. Great numbers of Arabs are admitted to Jewish hospitals, particularly that of Hadassah (Women's Zionist
744 Organization) in Jerusalem. Special health cen-
743 ters in Zemaḥ (Ṣamakh), in Huleh and elsewhere, established and maintained with the participation of various Jewish institutions --- such as Hadassah, Workers' Sick Fund, the Hebrew University and others --- serve primarily the Arabs of the region. Jewish doctors dwelled -- and a portion of them still live -- in medium-sized and small Arab towns such as Hebron, Beisan, Jenin and elsewhere. They maintained their residence through the years of the disturbances (1936-39) and even after some of them were murdered by Arab terrorists. (At the present time the Arab boycott forces Jewish physicians to leave small Arab towns which they inhabited and served for many years.)

feet in diameter, it is easily seen under water, and thus more 136
easily avoided than the *dawl*. The Arabs have no fear of the sea turtle and they relate that when they find one of these on the pearl banks, they ride it to the surface by grabbing it behind the neck and directing it upward.

But the dangers from sharks and devilfish (rays) are slight 164
compared to the physical danger resulting from simply driving 147
oneself past the limit of human endurance. The "bends" are a 752
common affliction among the divers and may cause severe pains in the joints, paralysis, or even death. Suppuration of the eardrums and rheumatism are also common. The divers may lose blood from surfacing too quickly or from staying under too long; Frederick Simpich tells of seeing a man come up from a 10-fathom dive bleeding at the nose as if someone had hit him with a ball bat.[31] Whitelock states that the divers of the Trucial Coast were very emaciated and suffered from inflamed eyes, which they treated with antimony.[32]

Divers never eat while working, except for a sip of tea or 262
water, as food would cause nausea. When the sun has sunk so 147
low that diving stops, they eat a few dates or a little rice and drink a little tea, but that is all. This is one of the reasons why they become so weakened and emaciated during a season. Sleep is the only energy builder the divers have.

OPENING THE OYSTERS

With dawn the first activity of the day is the opening of the 228
oysters caught the day before. By this time the oysters have been out of the water long enough for their shells to open, so that one does not have to fight them. The oysters are not divided according to divers, but are simply piled in sacks on the deck, so that no one knows exactly who caught the one that may contain the great pearl. After the valves are parted, the openers knead through the flesh, extract any pearls, and throw the shells and the meat overboard. Less than one-third of the oysters yield pearls and these are mostly "seed pearls," those very small irregularly-shaped pearls which might well be called "pearl dust."

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[31] F. Simpich, *National Geographic Magazine*, vol. 36 (1919), pp. 369–93.

[32] H. H. Whitelock, *op. cit.*, pp. 38, 44.

136 stinging tentacles that can easily put out an eye. There is also a needle urchin (*Diadema*), first reported from the Persian Gulf in 1949.[9] This urchin has spines more than a foot long, which can cause nasty, slow-healing wounds. However, as the urchin is several feet in diameter, black, and slow-moving, it is more easily avoided than the dawl.

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752 Pearl divers suffer from a variety of diseases, most of which can be directly traced to their occupation. Open sores and skin ulcers result from encounters with the dawl and scrapes against coral and other sharp objects. Suppuration of the eardrums, rheumatism, and nosebleeds are common. Inflamed eyes are always a sign of the pearl diver. Persian Gulf divers are more susceptible to the "bends" than divers who use suits, since they must surface as rapidly as possible.

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461 Divers never eat while they are working. When the day's diving is finished, the diver has some rice, dates, and tea, but not much else; sleep is his only energy builder. Every 10 days or so the divers get a rest, and every three weeks or so the dhows put in for food and water unless they have been revictualed at sea.

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438 In recent years Ras Tanura has become a center of activity for the pearling fleet off its shores; for the oil company's installations can now pump an abundance of fresh water into the water tanks of the dhows much faster than it can be transferred by waterskins. The larger vessels anchor for the night on the banks; the smaller vessels sometimes take shelter if it is available. Some vessels of the pearling fleet replenish their water supply from the submarine springs that gush into the Persian Gulf in numerous places along the Arabian littoral. Relatively fresh water can be brought up in a waterskin by a diver. One of these springs, marked by a spar buoy, is to be found a few miles north of Jubail.

228 The first duty of the day on a pearling dhow is opening the previous day's oysters, which are heaped on deck in a large pile so that no one knows who found the oyster which may produce the rare gem. The muscles of the oysters relax enough overnight so that it is not difficult to open them. Less than a third of the oysters yield pearls, and these are usually only very small seed pearls.

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439 Pearls are sometimes bought on the pearl banks by brokers who travel around in their own boats trying to get the best pearls before other brokers hear of them, and trying to get a valuable pearl before a nakhoda realizes its value. But whether the pearls are sold on the banks or at Bahrein, they

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113 [9] A. H. Clark and R. LeB. Bowen, Jr.: Echinoderms of Tarut Bay and Vicinity, Saudi Arabia, *Amer. Museum Novitates*, No. 1390, 1949.

501 a headdress—serve as his bedding. The Arab has not been spoiled by soft mattresses and can get a good night's rest on a floor, deck, or hard ground. The *nakhoda,* the mate, and a few selected passengers live on the poop. Sometimes an awning is spread over the poop to keep the burning sun out, and other times it is bare; sometimes a Persian rug is spread on the poop. There is invariably a cabin beneath the poop for the storage of valuable cargo and ship's stores (see Plate 22—top). This cabin is usually only the space between the continuation of the main deck and the poop deck. Sometimes there are doors leading forward, but more often it is simply open.

As there is no below on a dhow, there are quite naturally no toilets below. Dhows do carry toilets, however, in the form of one-holed privies, hung overboard off the poop (see Plate 21—bottom). They are usually on the port side, but are sometimes seen on the starboard; I once saw a large *sambuk* in Aden with two, one to port and one to starboard. These lack the privacy of a privy, and are almost completely open. Freya Stark[61] had to have the captain rig up a special awning for her when she traveled down the South Arabian coast in a dhow.

When the dhows carry passengers they are packed on the main deck like cattle. Living conditions are not too bad without passengers, but with a load of passengers, conditions immediately become foul. Ordinarily the bilge on a dhow is beyond description, but sanitary conditions become unimaginable with a load of passengers who are so packed in that they cannot all hang over the rail in rough weather. Villiers[62] tells of seeing a small 60-foot *bhum* from Oman sailing down the coast of Africa with about two hundred Omani passengers; it was estimated by the Arabs on Villiers' ship that ten of these would die before reaching Zanzi-
● [764] bar. Whenever there is a death aboard, the Arabs conduct a hasty sea burial; deaths are never reported to port authorities by the Arabs, for fear of not being cleared.

805 Although the Arab aboard ship has little concept of time as far as days go, he divides the day into four periods separated by the announcement
788 of the five daily prayers in which all good Moslems religiously indulge. Prayer time is announced by the *muezzin* (prayer caller), who may be any one of the crew or officers. The *muezzin* simply announces the time of prayer, and bears no similarity to a priest or minister, for the Moslems have none of these; their religion is voluntary. The first sound to fall on Arab ears every day is the raucous call of the *muezzin* perched on some

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[61] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 314.

[62] A. Villiers, *SS,* p. 184.

4:Lebkicher et al U-3 (no date)1952 MJl Saudi Arabia MJl
Maritime Arabs MK2

Typical date palm garden in the oasis town of Hofuf.

Pearl diver with nose-clip preparing to dive beside a pearling dhow.

Unknown burial mounds dating back to ancient times near Awali—Bahrein Island.

p. 29 (b)

S.A. 245

M.A. 172 764

M.A. 228

hour, after which time the Kuwait diver is dragged out of the 228
water and huddles in some spot on the ship looking more dead 461
than alive. He may average four shifts a day, making a total of 40 dives; O'Shea states that under excellent conditions the Trucial divers average 50 dives a day.[24] During this time he has spent almost one hour under water. Ten dives are not difficult, nor are 50 excessive in one day for anyone experienced; but day after day and week after week the diving goes on — for four months. When the season is over, the diver has weathered the impossible; 228
he has probably completed over 3,000 dives in from 30 to 50 feet 461
of water, and has spent over 50 hours under the surface of the 147
Persian Gulf — that is, over a full forty-hour week without air, valiantly striving to gather all the oysters he can see through his blood-shot and irritated eyes, which become less sensitive with each dive.

Every ten days or so the divers do get a day of rest, and if the 228
shamal is blowing they have to wait it out, as it roils the water. 461
Occasionally they have to go ashore to bury a diver who fails 147
to complete his 3,000 dives. It is not surprising that there are 164
one or two empty stations on each boat; their occupants lie huddled corpse-like under their cloaks in some part of the ship, too sick from scurvy or plain fatigue to dive. After they have been at it for many weeks, the divers are apt to get convulsive shivers when they come out of the water for their rest, even though the temperature may be 110° F. and their tenders are covered with a lather of sweat. There are few, if any, white men who could [771]
endure just one day of such punishment; the Arab could not either except for his belief that Allah is merciful and that a Paradise awaits him.

Every dhow has to put in for water and food every three weeks 228
or so. In recent years the pearling fleet has used the oil company's 312
pier at Ras Tanura for water, but vessels have been known to replenish their water supply from some of the submarine springs which gush into the Persian Gulf. A diver goes down with an [415]
empty skin and opens it in the potable stream; he can bring up fairly fresh water by this means. One of thse submarine springs,

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case stories one hears about the amazing power of the Arabs to stay under water from 5 to 10 minutes or more are absurd.

[24] R. O'Shea, *op. cit.*, p. 137.

the dhows leave the banks. These men wander through the fleet 228
1 in their own boats (usually launches) always trying to get to a 437
first quality pearl before the other brokers hear of it, and always hoping that the *nakhoda* will not recognize its value. The broker's paraphenalia consists of a magnifying glass, a small [413]
hand balance, weights, and a set of brass screens for grading the pearls. When pearls are sold on the banks they are ceremoniously transferred from the captain's red bunting to the broker's.

Regardless of where they are sold, the majority of the pearls 228
go to Bombay, and from Bombay eventually to Paris, the world's 439
pearl emporium. Pearls are usually shipped to Bombay by air. 456
The reason is simple: Usury and insurance are prohibited by the 784
Quran. If the pearls were shipped to India by Arab dhow or steamer through an Arab agent, there could be no insurance on the consignment. However, if the pearls are shipped via Trans World Airline or British Overseas Airlines Corporation, the pearls can be heavily insured. Thus, the Arabs use a Western agency to get around the Quranic prohibition. In Bombay, Indian workers skillfully pierce the pearls with fine bow-driven drills and string them on silk, graded according to color and size. The pearls are sold to European dealers in bunches consisting of a number of strings and generally known as "Bombay bunches."

When the season has ended and the pearls are sold, the captain 228
deducts the cost of the food and provisions. What is left repre- 465
sents the profit. Of this the owner of the dhow gets one-half; of the remainder each diver and each attendant gets one share and the captain two. Most of the dhows leaving Saudi Arabian ports are small (not over 40 feet) with small crews—usually something like 6 divers, 4 attendants, and a captain. Thus, each diver and attendant would get one twenty-fourth (about 4 percent) of the profits, and the captain would get one twelfth (about 8 percent). The pearling dhows operating out of Bahrein and Kuwait are generally much larger than the Saudi Arabian dhows, and may have crews of 40 or more. The profits of these craft are split in much the same way as the profits on smaller dhows, but the captain gets more shares with these larger crews than he does with the smaller.

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be warehoused in the dhow, until the market can easily absorb 439
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The dhow trade is "native" trade, a stubborn plant which has MA
been growing a long, long time. Nearly all the cargoes carried in 439
dhows are for the native bazaars, and almost never for European 443
account. Much of the cargoes consists of goods which the dhow captain himself, or some merchant or merchants travelling with him, sells for his own profit. The dhow is a peddler, as well as a carrier; a storehouse, as well as a ship; a means of livelihood to travelling merchants, as well as to her crew proper. Basra dates, though the most important outward cargo,[1] are only one source of revenue: there are a host of others, not necessarily always legitimate.

Kuwaiti owners of date plantations on the nearby Basra river K
play a considerable part in the financing of deep-sea dhows, MA
though in most cases the captains, called *nakhodas*, are at least [245]
the nominal owners. It suits the merchants well that the *nakhodas* 456
should regard themselves as the owners, for this provides them 471
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pay back not only the value of the dhow but the advance of freight given him to finance his voyage. Since Islam forbids all forms of ordinary insurance, this arrangement is to the merchant's liking. The *nakhodas* must accept it, for in most cases there is no other way by which they can acquire a big dhow.

In Kuwait, immediately prior to the outbreak of World War II, there was beginning to be some restiveness about this, and an association of the *nakhodas* had the temerity to issue its demands upon the merchants. These included payment of demurrage when unduly delayed at the loading berths in Basra (a dhow might be kept for weeks waiting for her cargo), a sliding scale of freights for different ports instead of the customary flat rate of 1.5 or 2 rupees a package regardless of destination, liability for the return of advances to cease with the loss of the ship, two competent officers for every seagoing dhow, and so forth. The demands represente

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there as having a capacity for 2,000 packages of dates, rather than as being of 100 tons burden. 505

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456 a bare minimun, surely, and no more than a nakhoda's right, but
471 the merchants' answer was that if the nakhodas could make new
784 rules, so also could they; and they had the real power. I do not
466 think the attempt of the nakhodas got them very far.

MA While the dates are generally carried both to India and East
443 Africa on a freight basis, nearly all other cargo is bought to the
505 ship's own account and peddled to best advantage. The mer-
439 chants have a substantial share in the dhow's earnings, apart from the sailor's own ventures, which are limited to what they can stow in a sea chest on the poop. As far as I was able to discover -- and I was more than twelve months sailing in deep-sea dhows -- the freight from the dates, on the typical African voyage, is used to finance a cargo of salt from Aden and to purchase odds and ends which might earn a profit in the bazaars of the Benadir coast and
MA Kenya Colony. At the same time, the dhow carries all the passen-
184 gers she can prevail upon to make a voyage, anywhere, for the Arab of Oman, and the Hadhramaut in particular, is an inveterate wanderer, and every dhow is a passenger vessel by the mere possession of deck enough to lie upon.

The salt is sold in the best market that offers between the Hadhramaut coast and Zanzibar. At the same time, the nakhoda does what trading he can in anything which he knows, from past experience, will command a market. The average dhow never leaves the Gulf without at least some carpets, allegedly Persian but generally of either Italian or English origin, which are used both as trade and as bribes. Cooking stones, ghee, live sheep, cows, sacks of rice and flour, dried fish, haberdashery of all sorts, brassware, cheap enamelware, Arab confectionery -- all these may be aboard, either as ship's ventures or as the crew's, generally the latter.

Every man of the crew concentrates on goods which can be bought cheaply in the free port of Aden, adulterated if possible in transit, and sold to the Somali or Swahili shopkeepers whose little stores abound in every port along the coast of East Africa, from Haifun in the north (which the Italians called Dante) to Mikindani in the south, which is about as far south as the Arabs sail in these days. Only Indian dhows go further, to Madagascar and the Comorin Islands. Gaily coloured turbans of the correct style

point of vantage. Before every prayer the Arabs first perform the required 788
Moslem ablutions of washing their hands, face, feet, etc., in sea
water; then they go through the prayer ritual facing towards Mecca with
their headcloth spread in front of them as a prayer rug. It is for determining
the direction of Mecca that the compass on a large dhow is often most
used! The first prayer is the dawn prayer said in the first greying light of
dawn; the morning prayer takes place when the sun is close to the meridian;
the afternoon prayer is called when the shadows begin to lengthen;
the evening prayer is said shortly after the sun sets; finally, the night prayer
ends the day several hours after sunset. The above applies to Moslem
Persians and Indians as well as to the Arabs; obviously it does not apply
to Hindus or sailors of other religions.

Eating is intimately related to Islamic religion for Arabs and other 261
Moslem sailors, as their three meals come directly after the dawn, the 262
morning, and the evening prayers. In the month of Ramadhan all faithful
Moslems neither drink nor eat during the daylight hours; however, 264
during Ramadhan all activities on land and on sea usually hit a low ebb. 785
In other months breakfast consists for the Arabs of little more than a
piece of unleavened bread with some sweet tea or water with which to
wash it down. Lunch has more to offer, consisting of a mess of boiled rice
with a flavoring of *ghee* (clarified butter) and curried or baked fish (if the
ship has any fish aboard). The main portion of the meal is rice, which is
served on a huge tray, or often simply on a palm leaf mat. The crew
gathers around several of these trays or mats and makes quick work of
the food, using no implements other than their right hand. They take a
little fish (or meat if they are that fortunate), ball a small handful of rice
around it and toss the ball deftly into their mouth, usually without losing
a crumb. Nothing is ever wasted, as someone always scavenges the
last morsel. Supper is essentially the same as lunch.

Often a feast is in order in port; this always calls for the slaughter of a 527
sheep (or goat), a number of which are always kept alive on board. The 252
sheep is usually slaughtered at dawn and is virtually dragged from its
skin into a large iron pot, where it is boiled in water. The sheep or goat
is the *pièce de résistance* and is served whole on a huge tray of rice. For a
feast, a curry flavoring or raisins are often mixed with the rice. Various
delicacies from the sheep, such as the heart, liver, lungs, and kidneys, are
cooked separately and served in side dishes. As the feast starts, the sheep 264
is methodically torn apart limb from limb and fiber by fiber. The meat
is always eaten in the same manner: rice is balled around small bits of
meat and tossed deftly into one's mouth with the right hand. In pulling

501 a headdress—serve as his bedding. The Arab has not been spoiled by soft mattresses and can get a good night's rest on a floor, deck, or hard ground. The *nakhoda*, the mate, and a few selected passengers live on the poop. Sometimes an awning is spread over the poop to keep the burning sun out, and other times it is bare; sometimes a Persian rug is spread on the poop. There is invariably a cabin beneath the poop for the storage of valuable cargo and ship's stores (see Plate 22—top). This cabin is usually only the space between the continuation of the main deck and the poop deck. Sometimes there are doors leading forward, but more often it is simply open.

As there is no below on a dhow, there are quite naturally no toilets below. Dhows do carry toilets, however, in the form of one-holed privies, hung overboard off the poop (see Plate 21—bottom). They are usually on the port side, but are sometimes seen on the starboard; I once saw a large *sambuk* in Aden with two, one to port and one to starboard. These lack the privacy of a privy, and are almost completely open. Freya Stark[52] had to have the captain rig up a special awning for her when she traveled down the South Arabian coast in a dhow.

When the dhows carry passengers they are packed on the main deck like cattle. Living conditions are not too bad without passengers, but with a load of passengers, conditions immediately become foul. Ordinarily the bilge on a dhow is beyond description, but sanitary conditions become unimaginable with a load of passengers who are so packed in that they cannot all hang over the rail in rough weather. Villiers[53] tells of seeing a small 60-foot *bhum* from Oman sailing down the coast of Africa with about two hundred Omani passengers; it was estimated by the Arabs on Villiers' ship that ten of these would die before reaching Zanzi-[764]bar. Whenever there is a death aboard, the Arabs conduct a hasty sea burial; deaths are never reported to port authorities by the Arabs, for fear of not being cleared.

805 Although the Arab aboard ship has little concept of time as far as days go, he divides the day into four periods separated by the announcement •788 of the five daily prayers in which all good Moslems religiously indulge. Prayer time is announced by the *muezzin* (prayer caller), who may be any one of the crew or officers. The *muezzin* simply announces the time of prayer, and bears no similarity to a priest or minister, for the Moslems have none of these; their religion is voluntary. The first sound to fall on Arab ears every day is the raucous call of the *muezzin* perched on some

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[52] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 314.

[53] A. Villiers, *SS*, p. 124.

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795 Since its inception shortly after the death of the Prophet, the Shiah heresy has given rise to numerous distinct sects, all more or less closely allied with the common faith. Under it dervish orders have flourished. The theology of many of these orders has more in common with the pantheism of India than with the monotheism of real Mohammedanism. Mysticism of the most extreme sort has always been one of their characteristics. A prominent example of this tendency of the Shiahs to form secret orders is seen in the Ismailites, or Assassins, who were a medieval development of the faith. They were a carefully organized secret society with lodges scattered over the whole Mohammedan world. There were seven orders in the lodge and those who attained to the highest had ceased to be real Mohammedans at all. This society adopted assassination as a legitimate method of work. By them murder was reduced to a fine art, and they spread terror over the whole Mohammedan world in the later days of the Baghdad Caliphate. The Mongol invaders who destroyed Baghdad and ravaged Mesopotamia have at least this much to their credit, that they wiped out this evil sect.

The Ismailites, although they achieved more notoriety than other groups in the eyes of the non-Mohammedan world, are only one of a great number of Shiah sects, many of which played a prominent part in the political and religious development of Islam in the past and are extremely active elements today. It is beyond our province, however, to follow their history in detail, and for purposes of general consideration the modern Shiah sects may be regarded as a unit.

FWD A
● 795 This highly colored faith with its tendency to pantheism and mysticism, with its saint worship and ritual

5: Harrison D-4 (1912-1924) 1924 M1 Middle East
Maritime Arabs Mk2
Bahrain M22
Saudi Arabia M51

and graphic portrayal of the sufferings of saints and martyrs, has a large following among present-day Arabs, particularly in Mesopotamia and among the pearl divers of the Persian Gulf. It seems to appeal especially to the laboring classes. The vast majority of the pearl divers of Bahrein and the East Coast are Shiahs. Just when this schismatic faith penetrated the district no one seems to know. Bahrein is an island, and was once under Persian domination, although the Persian mainland is much farther away than the Arabian, which indeed is in sight of Bahrein on clear days. Possibly as a result of this Persian occupation, the islands and the adjacent Arabian mainland are populated by a peculiar community known as the Baharina, which bears every evidence in temperament and otherwise of being a mixture of Arab and Persian blood. A certain number of Sunni Arabs do dive for pearls, but generally they are strangers who come from outside. The two classes rarely associate even in their work. The Baharina as a community are solidly Shiah in their religious convictions.

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The ideas of the Shiahs have never penetrated deeply into inland Arabia, and there the date gardeners are Sunnis, as are also the artisans. Hasa, however, which is at the same time a large oasis and a pearl-diving community near the coast, has been reached by the Shiah faith, with the result that the community is divided sharply into two classes. The smaller class includes the rulers and the merchants and land-owners and is Sunni in its religious convictions. The other, much larger class includes pearl divers and artisans, of whom there are thousands, and the gardeners, who must constitute from seventy-five to ninety per cent of the population, and these are all Shiahs. One might almost say that
every man in Hasa who does an honest day's work is a Shiah,

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his vessel pays practically no port dues. His dates can therefore 438 be warehoused in the dhow, until the market can easily absorb 439 them. 505

The dhow trade is "native" trade, a stubborn plant which has MA been growing a long, long time. Nearly all the cargoes carried in 439 dhows are for the native bazaars, and almost never for European 443 account. Much of the cargoes consists of goods which the dhow captain himself, or some merchant or merchants travelling with him, sells for his own profit. The dhow is a peddler, as well as a carrier; a storehouse, as well as a ship; a means of livelihood to travelling merchants, as well as to her crew proper. Basra dates, though the most important outward cargo,[1] are only one source of revenue: there are a host of others, not necessarily always legitimate.

Kuwaiti owners of date plantations on the nearby Basra river K play a considerable part in the financing of deep-sea dhows, MA though in most cases the captains, called *nakhodas*, are at least [245] the nominal owners. It suits the merchants well that the *nakhodas* 456 should regard themselves as the owners, for this provides them 471 with a cheap form of insurance. If the dhow be lost it is the 784 *nakhoda's* loss, and not the merchant's, for the poor captain must 466 pay back not only the value of the dhow but the advance of freight given him to finance his voyage. Since Islam forbids all forms of ordinary insurance, this arrangement is to the merchant's liking. The *nakhodas* must accept it, for in most cases there is no other way by which they can acquire a big dhow.

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manded.[46] Few dhows carry ship's carpenters; they hire a carpenter when 505 396
they need one.

The actual duties of a dhow crew may often begin weeks or months before 505
the voyage starts. If the dhow is new, the first duties of the crew are to rig the ship and make the sails (see Plate 20—top). A boatbuilder furnishes only the hull with masts and yards; fitting out the ship is considered part of the work preliminary to making the voyage, and the sailors do not actually receive money for this preliminary work, as they are paid only when the voyage is over. If they actually need it, the *nakhoda* will give the sailors cash advances; these advances are later deducted from the sailor's share of the vessel's earnings at the end of the voyage. Thus the *nakhoda* fits out his ship at no cost to himself so far as labor goes—the crew actually furnishes it for nothing! Besides this the crew does all the stevedoring on any cargo the dhow may carry, also transporting the cargo in the longboat when required (see Plate 19—bottom).

Arab dhows keep no schedule and know little routine. At sea everyone, including the *nakhoda,* usually loses track of time. Friday, the Moslem day of rest, is not observed at sea, so the sailors work the month around and days come to mean nothing; it is easier not even to try to keep track
of them. The only track of time the Arabs keep is the occurrence of Rama- [805]
dhan, the month when the Moslems fast during the daylight hours. The Arabs know whether Ramadhan is before them or whether it has passed; if it is ahead of them, they keep a very rough idea of how far off it is.

When there is no work, the crew sleeps in a shady spot, if one is available—on the cargo or a pad. All hands turn out day and night for any work. It is not uncommon to see a dhow-load of sleeping sailors pass in broad daylight, but they can be on their feet in a second.

Watches are informal and virtually nonexistent on a dhow. Usually the *nakhoda* keeps watch during the day and the mate or a quartermaster or a boatswain keeps watch during the night. It usually turns out that the helmsman keeps watch, as he is the only man who has to keep awake! The carpenter on a Kuwait ship stands no watches and has few other duties outside of his boatbuilding.

There is a general working period of several hours for all hands every day, usually during the morning. The most essential duty is bailing; the foul bilge water is brought up from a small bailing-well in buckets, and is either dumped into a bailing-trough to flow overboard or dumped overboard via a fireman's bucket brigade. The decks are never washed down, as the water would drain below, through the leaky decks, rather than

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[46] A. Villiers, *SS*, p. 268.

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[61] F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 314.
[62] A. Villiers, *SS*, p. 124.

the owner in turn receives. Such fraud as the introduction of 228
cultured pearls, if detected, would bring out the headman's ax, 656
for Arab laws are severe in this respect. But as there are always people willing to make a dishonest dollar or rupee—and the Arabs are certainly no exception—it is inconceivable that cultured pearls, carefully chosen for their similarity to Gulf pearls, have not at times been smuggled into the Persian Gulf. If the Arab merchants cannot detect them, there are probably few experts who could without the aid of delicate and elaborate electrical instruments.

OYSTERS AND OYSTER BEDS

Arab lore in the Gulf relates that the young shell-less oysters 825
come to the surface when it is raining, or when the moon is full. The raindrop is the father of a good pearl and the oyster the mother, while the moon produces luster. A poor season is attributed by many to a shortage of rain. Al-Qazwini, author of *The Wonders of Creation,* gives a different version: the north wind carries a mist containing a viscid substance similar to mercury from the Caspian Sea to the Gulf; the oysters draw in this substance, a large drop forming a large pearl.[9] But every Arab has his own explanation of the phenomenon, and believes that the true scientific explanation is just fantasy.

According to O'Shea, three types of pearl oysters are found in 228
the Persian Gulf, known to the Arabs as *mahharah, zanniyah,* and *sadaifiyah*. The *mahharah* are the commonest, growing to two or three inches in diameter, and producing 98 percent of the pearls found in the Gulf. The *sadaifiyah* is a rare find and seldom yields pearls; it grows to great size (six to eight inches in diameter) and is often collected for its mother-of-pearl. The *zanniyah* is found in the vicinity of the Ras al-Khaymah in Oman; no details of this oyster are given. In the Red Sea two varieties are commonly found: the large oyster, known as the *balbil,* and the small, known as the *sadaf*. The pearl itself is known as *lulu* to the Arabs in the Persian Gulf, irrespective of the species of oyster from which it comes, while the Persians know it as

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[9] A. Rihani, *op. cit.*, p. 277.

228 *mawarid*. O'Shea relates that in Oman the pearl is commonly referred to as *qumash,* which is also Arabic for "material" or "goods."[10]

228 133 Pearl-bearing oysters are found in most of the Persian Gulf waters in depths varying from just below low tide to 20 fathoms. On the Persian side of the Gulf the bottom falls off rapidly to the 50-fathom maximum in the Gulf. On the Arabian side the bottom slopes off gently so that there are extensive areas within the 20-fathom limit. Thus, there are few pearl oysters on the Persian side, although fine pearls have been reported from near Kharaq Island off Bushire, and from Lingeh, but these are exceptions. However, extensive pearl beds are found along the Arabian side, stretching almost continuously for 700 miles from near Ras al-Khaymah east of Sharjah on the Trucial coast, to Ras al-Misha'ab south of Kuwait, the best beds being between 5 and 10 fathoms. The most productive are located to the north and east of Bahrein Island; this is probably why Bahrein has been the pearl center of the Persian Gulf. However, Dr. A. E. Alexander, a leading authority on pearls who visited the banks in 1947, estimates that only 35 percent of the Gulf pearls come from around Bahrein Island; the remainder comes from the Trucial Coast and from the banks near Kuwait.

228 502 825 The success of any pearling season seems to be as unpredictable as the habits of the pearl oysters themselves; the oyster beds shift periodically so that their exact location is not known until the diving starts. Sometimes the pearls are plentiful and valuable, at other times they are neither. Sometimes a bank is sterile for several seasons; then the next it may yield all the highest quality pearls. None of the banks are charted; each *nakhoda* has his own knowledge of them and his own theories. Arab experts believe that the largest, most dense, and whitest pearls come from deep water, while shallow water yields only low density pearls tinted with some color. Some of the more pessimistic Arab observers claim that the Persian Gulf fisheries never yield over two first-quality necklaces in any one season.

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[10] Raymond O'Shea, *Sand Kings of Oman* (London, 1947), p. 133.

[502] One of th[e]se submarine springs,
228 located a few miles north of Jubail, has been marked by a spar
312 buoy by order of King Ibn Saud.

O'Shea states that while the divers on the Trucial Coast are
228 rarely attacked by sharks, about 30 were attacked and two killed
165 around 1940.[27] Whitelock states that the Arabs claimed that the danger of sharks was ever present, but that their worst fear was from the saw fish, which had been known to cut divers completely in two.[28]

228 Rihani writes that what the Persian Gulf pearl diver dreads
325 most is the *dawl*. However, he apparently does not realize what
136 the *dawl* is, merely quoting Sheikh Khalifah ibn Muhammad al-Nabhani's *History of Bahrein:* "The *dawl* is a semi-fluid animal, about the size of a man's hand, round in shape, with a multitude of tendons about two feet in length, resembling a network of silk. It has no power of locomotion, but is driven by the waves and currents hither and thither. If it comes in contact with the body of man, it burns it, leaving a deep scar; and if it is lifted out of the water and left in the sun for five minutes, it dissolves."[29]

The zoologist will immediately recognize this description of the *dawl* as a jellyfish. It is in fact a small bell-shaped jellyfish with two to three foot-long tentacles. The *dawl* swims at any level and is practically invisible underwater; thus the divers cannot keep away from the stinging tentacles, which will burn the body and can put out an eye. Along the Ras Tanura peninsula, the *dawl* is most often seen near the surface shortly before flood tides.

136 There is a species of needle urchin (*Diadema*) in the Persian Gulf with spines from one or two feet long.[30] It is known that these spines will produce nasty slow-healing wounds if bumped into under water. This urchin may be the cause of some of the open sores on the divers' legs, although salt water alone could cause them, for the Persian Gulf has the highest salt content of all the ocean bodies, and constant immersion in salt water is known to produce a rash. However, as the *Diadema* is black and several

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[27] *Ibid.*, p. 138.

[28] H. H. Whitelock, *op. cit.*, p. 43.

[29] A. Rihani, *op. cit.*, p. 280.

[30] *Diadema* was first reported from the Persian Gulf by this author: A. H. Clark and R. LeB. Bowen, Jr., "Echinoderms of Saudi Arabia," *American Museums Novitates*, No. 1390 (1949).

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Fig. 26—Emir Nasir of Darin with a season's crop of pearls from his pearling jalbut.

Pearl oysters are found from low-tide level to 20 fathoms. There are pearl beds off the whole Arabian coast from Bahrein to Ras al Mish'ab, but the best banks are north and east of Bahrein Island, and the best beds between 5 and 10 fathoms. The beds are not charted; indeed, this would be useless, since they shift periodically. A bank may be sterile for several years and then suddenly produce the finest pearls of the season. The Arabs believe that the best pearls—the largest and whitest—come from deep water, though some of the more pessimistic say that the Persian Gulf never yields more than two first-class necklaces in any one season.

527 The pearling boats leave Bahrein, Kuweit, and the Trucial Coast of
502 Oman for the main season en masse to drum beating and chants, but the few dhows from the Saudi Arabian ports slip out unceremoniously. The Bahrein fleet works up, the Kuweit fleet works down, and the small Saudi Arabian fleet works in the middle.

The *nakhoda* (captain) of a pearling dhow orients his craft at the edge of a bed so that when the anchor line is paid out, the dhow will drift across the bed. When the divers start to get only a few oysters, the dhow is allowed to drift a little. When it is completely across the bed, the crew moves it back to a fresh location with the sweeps, to the accompaniment of drum beating and chants. It is here that the nakhoda shows his real skill and knowledge, for he must keep his craft in virgin water.

222 Pearl diving in the Persian Gulf is essentially "skin diving." The diver wears only a loincloth and leather fingers to protect his fingers from sharp
292 coral and shells; a horn noseclip and cotton or beeswax to stuff into his ears complete the "equipment." The use of drags, dredges, or compressed-air diving suits has been prohibited by the British, long the protectors of the Persian Gulf, and only the inhabitants of the Gulf—Arabs and Persians—can work the pearl fisheries.

2. Villiers T-8 (1938-39) 1948 MK2 Maritime Arabs MK2

Kuwait MI1

MA When a deep-sea dhow is built, at least some of the money is
471 put up by the *nakhoda* himself and his family. It is the first essen-
426 tial of the *nakhoda* that he should be from a family of standing in
565 the community, which will pay its debts. Just why such families
cannot finance a dhow by themselves I was unable to discover, but the Arab, apparently, has no objection to carrying on business under a cumbersome structure of debt. The merchant, backed by the Sheikh or the ruling family, backs the *nakhoda's* family, who support in turn a trusted and experienced member to take command of the dhow.

MA It is customary for the boys in such families to go to sea while
565 very young, but they never work as sailors. They are always
871 privileged: no sailor can become a deep-sea *nakhoda*, since obvi-
867 ously if his family is of standing, he would never serve before the
mast. The children sail with him sometimes from the age of six or seven, though not regularly. They will make one or two long voyages, looking on and learning but not actually doing anything; then they will remain at home a year or two before going out again. They take command very young. Schooling, at least in 1939, was normally restricted to the local Koranic schools, and rarely occupied more than three months in the year. Only merchants' sons went to the colleges of Iraq, Egypt, and Syria.

MA Gradually the head of a *nakhoda's* family may attain the
565 status of a lesser merchant himself, though his merchandise is
554 generally limited to the wherewithal to build ships, which comes
505 up in his own dhows from the Malabar coast. But a *nakhoda*
himself almost never becomes a merchant, and a merchant's son never becomes a *nakhoda*. Nevertheless, the profession of conducting deep-sea dhows about the waters of the Indian Ocean is a highly respected one, and the shipmasters of Kuwait are, on
MA the whole, a very competent and knowledgeable class, though
487 few of them can practice much astronomical navigation. Even
their long voyages down to Zanzibar or to Calicut are coasting, really down with one monsoon, and back with the other, almost always in sight of land. Their real ability consists in their local knowledge, both of ports and trade.

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MA In Kuwait, in 1939 — as now — there were upwards of 10,000
505 qualified deep-sea sailors. An astonishingly high proportion is of
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MARINE INDUSTRIES OF EASTERN ARABIA

RICHARD LeBARON BOWEN, JR.

361 THE Persian Gulf coast of Saudi Arabia is desolate in the extreme: in
226 many places one travels along the beach for dozens of miles without
seeing a living soul. But there is a sprinkling of old coastal towns,
503 whose inhabitants for the most part gain their livelihood from the sea.
315 Among them are Jubail, long a port of entry for the capital city of Riyadh, 235 miles inland; Dammam, seaport for the Qatif and Safwa oases (a deep-water pier has recently been constructed at Dammam); Al Khobar and Oqair, ports for the great oasis of Hofuf (Hasa). To these have been added of late years Arabian American Oil Company settlements at Ras al Mish'ab (a construction camp and port facilities), Nejma (a refinery and camp), and Ras Tanura (pipeline terminus and cargo wharf).

FISHING

226 Foremost among the marine activities of the older coastal towns is fish-
262 ing. Although there are far fewer species of fish in the Persian Gulf than in the Indian Ocean, they are present in greater numbers, particularly the porgies, than one might expect in so warm a body of salt water, and fish form a welcome addition to the diet in a land where food is pitifully scarce.

226 Fishing methods range from a simple hand line to large and complicated
● [857 fishweirs. On land the hand line is used mainly by small boys, who, like
504] the small fry of any other country, enjoy fishing. Since there is an almost complete lack of jetties and piers, these young fishermen have to stand on the beach and heave their weighted lines as far as they can (Fig. 2). When the fish are running, these youngsters line the shores, and their catch is sometimes sizable. Hand lines are indispensable on every dhow and are thrown out as soon as the boat is in open water.

A more advanced type of fishing uses the throw net—a circular net about 16 feet in diameter made of quarter-inch-mesh netting. The periphery is weighted with small lead weights, then doubled back toward the center and tied at 12-inch intervals to form a continuous pocket some six inches deep. The fisherman walks in knee-deep water at low tide, holding his net—which he has folded and gathered with the perfection of a parachutist—

➤ DR. BOWEN is a chemical engineer now resident in Providence, R. I. His field experience in Arabia includes three years with the Arabian American Oil Company (1945 to 1947) and some months as technical and engineering adviser to the Arabian expedition of the American Foundation for the Study of Man (1950).

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[857]

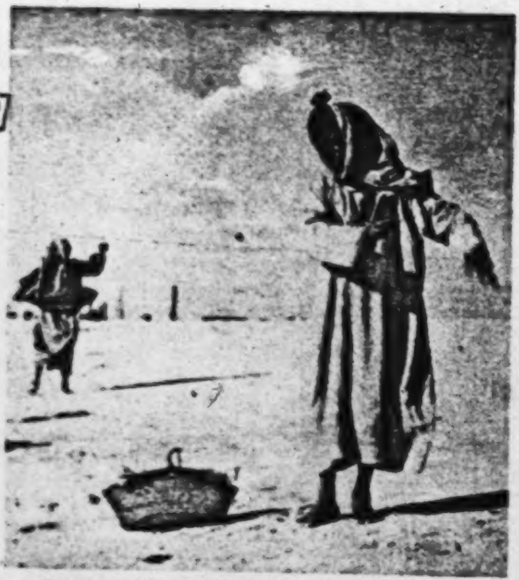

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FIG. 2—Arab boys fishing with hand lines. When the fish are running, small boys often line the shore by the dozen.

the Koran, but a particularly juicy delicacy from a fish's point of view. The Arabs dot the shallow water with these basket traps at points where feeding appears good; the edges of small coral reefs are favorite spots.

The Arab fisherman never marks his traps with floats as the American lobster fisherman does, because he fears they will be plundered; he must remember the location of each trap. Where he cannot see the bottom, he suspends a float several feet below low-tide level. To tend his traps, this Arab rows his small boat up and down at low tide until he spies his trap or float and hooks it with a pole; in shallow water he sometimes dives for the trap. I once watched a crew of three fishermen off Ras Tanura; they seemed to know the approximate location of each trap in the 30 feet of water, but they spent as much as a quarter of an hour peering into the water to find each submerged float. These men used the largest wire traps I saw in the Persian Gulf, and their catch at times was astounding.

The Arabs on the east coast of Arabia seldom use seines, though on Bahrein Island I saw several drying in the sun. However, large communal seines have apparently been used on the Batinah Coast of Oman; for Thomas[1] relates that "there, a hundred fishermen were hauling ashore a communally owned net, the vast extent of which was marked by distant bobbing floats . . .. In contrast, a lone fisherman, far out, monotonously cast his circular hand-net." On the Hadhramaut coast of South Arabia the fishermen also use large seines. At Mukalla I saw a two-and-a-half-inch-mesh net 190 feet long and 20 feet wide; a narrower net had a mesh of five inches. These wide-mesh nets are used for sharks. Farther east on this coast, at Jazir Bay, the fishermen set their seines by swimming out to sea on inflated sheepskins!

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[1] Bertram Thomas: Alarms and Excursions in Arabia, London, 1931, p. 156.

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M
228 such a number of chronic running ears. The lungs are
164 often affected, and all along the diving coast pulmonary
tuberculosis is common. This is not remarkable when we know that in the opening days of the season the men frequently dive in water that is so cold that they spit blood. Many return from their summer of semi-starvation and unsuitable diet of rice and dates with their gums sore and bleeding from scurvy.

Living conditions in the community* are what might be
M expected. Disease is common. The death rate is high.
511 Poverty is universal. In good years the standard of life is none too high. In bad years it is reduced almost to the starvation point. During a hard year the food of the divers is poor in quality and scanty in amount almost to the degree of partial starvation. They usually live in date-stick huts, and in the winter must frequently shiver in unwarmed houses because they have no money for fuel.

M In such communities there is little or no interest in
871 education. A diver has reason enough, one might sup-
212 pose, for wanting to know how to read and write and keep his own accounts, but it is rare that one of them knows as much as that, and apparently it is equally unusual to find one who is trying to educate his children so
M [868 that they may escape the slavery that binds him. The
● boys are frequently taken out to learn pearl diving while
B they are still under twelve. In Bahrein the American
871 Mission has tried for many years to develop educational
185 work of an elementary sort, but has found it practically
658 impossible because there is no demand for such things. The considerable Persian community in the city has made efforts from time to time to establish educational work for its own boys. The Persian schools exist for a little

*[of pearl divers -- Analyst]

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